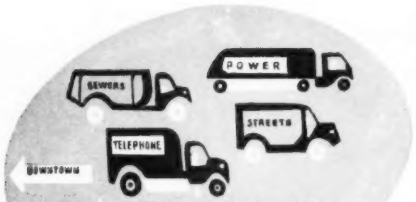
ELECTRICAL WORLD *News Issue*

OCTOBER 15, 1949

A McGRAW-HILL PUBLICATION

Edward D. Anderson, New President of Indiana Electric Association

You carry the tax load in your town!



City decentralization—away from traffic jams—requires more generating equipment, new facilities that cost TAX DOLLARS

Decentralization also means less business downtown. Property values drop! TAX RATES CLIMB!

ELECTRICS CARRY MORE PEOPLE FASTER

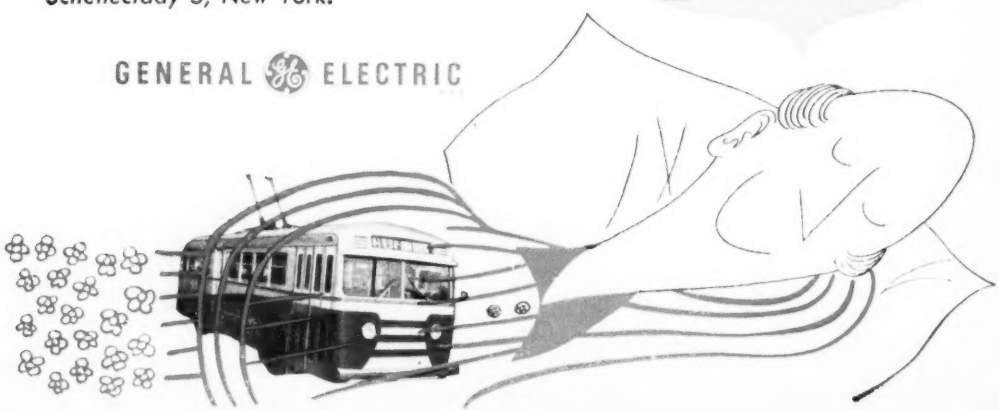
You have the biggest stake in transit. Let us help you promote sound transit practices. Modern *electric* transit attracts more people to public transit, greatly reduces traffic congestion.

Apparatus Department,
General Electric Company,
Schenectady 5, New York.

Million-dollar superhighways and freeways mean SOARING TAX RATES

Modern transit methods use street space most efficiently. That means less traffic, more customers, stimulated business!

GENERAL ELECTRIC



The Electrical Week

Output dropped last week below the corresponding week of the previous year. It last happened August, 1946. Significance: Steel and coal strikes, particularly steel, are starting to hit industrial consumption hard . . . Another sorry "first"—a lightning bolt hit a BPA line, the resulting burden disrupted entire Northwest Power Pool . . . REA co-ops work hardest at news publications for residential customers, but some companies do a good job, too.

U. S. may get British help in pioneering electric power production from the atom. The Truman Administration is conferring with Britain and Canada on a possible atomic energy partnership. If Congress approves, we may pick up valuable aid in atomic power research, on which British have concentrated.

Harold R. Christoffel, former leader of the CIO Auto Workers at Allis-Chalmers, will be tried again on charges of perjury. Trial date will be Jan 16. The charge is that he perjured himself when he denied to the House Labor Committee that he was not a Communist or associated with them.

Central Valley power will be a red-hot issue in next year's Senatorial contest in California. Rep Helen Gahagan Douglas, who hopes to wrest the Democratic nomination from Senator Downey, already is attacking him and GOP Senator Knowland from this angle. When the Senate refused funds for Interior's proposed Delta steam plant, she charges, neither protested for "the People of California."

The government took its first stab at settling the coal strike last week, then stepped out of the picture again. Mediation Chief Cyrus S. Ching succeeded in getting John L. Lewis to resume negotiations this week with Southern mine operators at Charleston and with the others at White Sulphur Springs, W. Va. Ching's threat: A coal fact-finding board, like steel's, which Lewis doesn't want.

A check with firms selling wiring materials in Wisconsin Power & Light Co territory reveals that over 50% of the wire sold is No. 12. Before the war No. 14 wire accounted for 85% of the sales.

Senate Interior Committee hearings on charges made against Reclamation Commissioner Strauss and California Regional Director Richard Boke by Sen Sheridan Downey opened Oct 11. Former Commissioner Harry W. Bashore denied he was "forced out" as commissioner and praised Boke. Headline attraction at the hearings was the appearance as a witness later in the week of newspaper columnist Harold Ickes, former Secretary of Interior.

Upon returning home the ECA-sponsored group of representatives of France's heavy electrical equipment industry will plug for standardization of component parts. They were amazed at the American practice of using one component in many different items of equipment.

Bureau of Labor Statistics has disclosed that there were three times as many strikes—and three times as many workers involved—against heat, light, and power utilities last year as there were in 1947. In 1948 there were 18 strikes involving 2,530 workers, who were idle 13,600 man-days. In 1947, there were 6 strikes involving 870 workers, who were idle 23,000 man-days.

The U. S. Department of Agriculture claims that 1.5 million farm homes use LP gas for cooking.

Notes From The News

Quoddy village near Eastport, Me., site of the suspended Passamaquoddy Bay tide-harnessing power project, has been sold by General Services Administration for $131,755.55. The empty 232-acre village of 250 buildings was built in 1935 at a cost of $1 million. Last year War Assets Administration set a fair-value price of $396,000 on it . . . Sales of television sets in the Buffalo area during September recorded the biggest increase for any month since the introduction of television, 7,431 additional sets. This boosted the total number in operation in the area to 36,764 . . . Legislation to stop Rural Electrification Administration from lending money to cooperatives which compete with local merchants in sales and servicing of electrical appliances has been proposed by Joseph T. Meek, executive secretary, Illinois Federation of Retail Associations. . . . The electric power grids of Rumania and Bulgaria have been linked by a transmission line across the Danube at the ports of Giurgia and Russa . . . Arkansas Power & Light Co will build a general division, and local office building, to cost more than half a million dollars, in Pine Bluff.

REA-FINANCED CO-OPS outstrip privately owned utilities in number and quality of regularly issued consumer publications. Outstanding among power company efforts is Georgia Power Co's "Round the Home," monthly magazine sent to 94,500 customers, mostly rural

Co-ops Profit from Consumer Papers

Use Them to Promote Electricity on Farm, Propagandize for Public Power as Well as for Routine Business; Private Utilities Largely Neglect Field

SOMETHING new under the sun—comparatively, at least—is the utility news publication aimed at the customer. That is, the general residential power consumer, as distinguished from the stockholder-customer and the employee-customer.

The average privately owned electric utility is well aware of the importance of the latter two types of customers. Bigger, if not always better, reports to stockholders and employee magazines are resulting from increasing company attention to these public relations media. Many utilities also have publications for industrial or commercial customers, or both. But only a handful of power companies try the direct news-publication approach to ordinary residential customers. And the number that do this well is even smaller.

On the other hand, government-financed electric cooperatives rely heavily on such publications. Magazines, newspapers, and newsletters, published by more than half the approximately 1,000 REA-backed co-ops, may fairly be said to represent their primary public relations activity.

Use of the power co-op customer publications is broad. In some cases, they apparently aim chiefly at urging co-op customers to read their meters and pay their bills promptly. In others, they rally help for co-op construction projects, give warning of anticipated outages, encourage efficient power use on the farm. Of more concern to the private industry, however, has been the widespread employment of the co-op publications to propagandize for public power on issues of both local and national scope.

Gaging the effectiveness of co-op consumer publications is difficult. Rural Electrification Administration, which gives them technical advice and some editorial material, believes they do a bang-up job of promoting co-op power. The number of such publications, which tapered off during the war years before hitting the present surge, indicates the co-op themselves feel they are getting results.

Private electric utilities—those which have given the idea any thought—largely choose to stay out of the customer publication field for a variety of reasons. A major factor probably is cost. With far more consumers than the average REA co-op, most power companies would find the expense of preparing, printing, and distributing a publication for all customers too high.

Is EW Arriving Earlier?

Subscribers should be getting their copies of ELECTRICAL WORLD earlier. The Post Office has approved newspaper handling, which will put EW on the fastest trains to main distributing centers and assure more prompt delivery by local post offices.

Further, most power companies already have split their public relations budgets between reports to stockholders and magazines for employees, so far as actual publications go. To reach the general consumer, they rely largely on the news and advertising columns of daily newspapers.

But neither custom nor expense has prevented Georgia Power Co from entering the customer-publication field. It's "Round the Home"—probably the best company venture of its kind—goes regularly to 94,500 Georgia Power customers, mostly in rural Georgia. Written in the style of commercial farm magazines and generously illustrated, it stresses the use of electric power in bettering farm life.

Of the other customer publications of power companies, by far the largest number are occasional affairs—initial welcomes to new customers, household hints for wives, other sporadic insertions with monthly bills.

Despite the smaller number of customers they try to reach, the power co-ops also have to battle the cost bogey. Most of them get around this by keeping the publication simple, in many cases, even downright crude. Edited in the manager's office, the co-op newsletter costs from two to five cents a copy. Typically, the newsletter generally a one or two-page affair, is produced by offset, rather than the more common and more costly relief printing. Most are issued monthly, and only a few accept paid advertising. The

FOR PIONEERING efforts in establishing at Perth Amboy, N. J., plant of the General Cable Corp a "pilot operation in the study and cure of bias," Dwight R. G. Palmer, right, company president, was presented the "1949 American Brotherhood Award for Distinguished Civic Service." The award was made by the National Conference of Christians and Jews, of which Charles E. Wilson, left, president of General Electric Co, is co-chairman. In center is Sen Brien McMahon, who spoke at the presentation dinner in New York

trend against advertising is to avoid conflict with local newspapers.

Nor does the co-op newsletter compete news-wise with the local papers. It aims for the folksy, over-the-backfence type of language of the country weekly newspapers. But it uses that language to describe activities, problems, and plans of the co-op itself.

For example, a South Carolina co-op warned its customers through the co-op news letters well in advance that it was cutting in a substation. And though an outage affecting several hundred families resulted, the co-op received not a single complaint or inquiry during or after the outage.

The newsletters usually carry the co-ops' latest financial statements and give considerable space to plans for annual meetings. But the grist of the newsletter generally is news of interest, and value, to the customer—instructions on filling out rate cards, explanation of outages, tips on better use of power on the farm.

The *Planters REA Newsletter* at Millen, Ga., told its readers, "When your lights go out, your linesman wants to know:

"1. Have you checked your fuses?

"2. Are your fuses in tight?

"3. Are all your lights out?

"4. Do your neighbors have electricity?

"5. Can you see anything wrong on the line, such as broken wires, trees or branches on the lines?"

Such stories help the co-op run down causes of trouble that otherwise would prove difficult to find on far-flung rural lines.

But a major cause of REA's enthusiasm for co-op publications is their stimulation of customer loyalty. REA spokesmen attribute last year's failure of negotiations by a power company to purchase a Virginia co-op to an anti-sale campaign by the co-op newsletter. There were other factors involved, of course, but the publication certainly helped to bring out the record number of members for the meeting at which the purchase proposal was rejected.

Publications of individual co-ops, in the main, have stuck to their own knitting, printing items of bona fida interest to their own members. A few as well as a number put out by "statewide" co-ops (organizations of several co-ops in a single state), have plunged into more questionable fields.

At the recent meeting of the Northwest Public Power Association, A. Dave Mueller, editor of the Oklahoma Rural News and a "statewide" official, told of some of these ventures in his region. The co-op publications, he asserted, had carried the "public power message" to farmers of Oklahoma. They had helped, he added, in influencing Congressmen and had participated in fights to upset former members of Congress.

At present, he indicated, Oklahoma co-op publications are waging a campaign to defeat the reelection of Sen Elmer Thomas, Democrat, whom they consider "hostile" to public power.

Such activities make the casual observer wonder about the considered judgment of one REA official, who pontificated: "Co-ops with newsletters never get in trouble."

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Lightning Hits BPA Line; Power Pool Disrupted

Lightning knocked out a line in the overloaded transmission system of the Northwest Power Pool last week (Oct 6) to set off one of the most extensive system disruptions on record in the area.

Practically all transmission west of the Cascade Mountains from Vancouver, B. C., to below Eugene, Ore., was affected when lightning struck Bonneville-Vancouver 230-kv Line No. 1, carrying almost 300,000 kw. Service was out for 20 minutes in some areas.

The flashover threw more than 500,000 kw on Line No. 2 and took out all Vancouver-Bonneville, Oregon City, St. Johns, and Covington-Columbia lines and the Vancouver-Covington 230-kv.

Grand Coulee Dam dropped 780,000 kw and Bonneville 455,000 kw. Ross and Covington substations were dead for about a minute for the first time since their construction.

Sol E. Schultz, chief engineer for Bonneville, declared that BPA "is facing the worst emergency in its history in terms of the critically loaded lines out of Bonneville and Grand Coulee Dams.

"Outage on any one of the heavily loaded 230-kv circuits can cause widespread system disruption," he warned.

At present, the two 230-kv Bonneville-Vancouver circuits are loaded to about 300,000 kw, with no relief in sight until the Bonneville-Troutdale 230-kv line is energized Nov 30. The Grand Coulee 230-kv lines must carry 190,000 to 220,000 kw until the Grand Coulee-Snohomish 230-kv line goes into service late this month, he explained.

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Line Purchase Okayed

Dayton Power & Light Co purchase of power lines in the Sidney section from Central Ohio Light & Power Co has been approved by the Public Utilities Commission.

ELECTRICAL WORLD, Published weekly by McGraw-Hill Publishing Company, Inc. Publication Office, 99-129 North Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 West 42nd St., New York 18, N. Y. James H McGraw (1860-1948), Founder; James H McGraw, Jr, President; Curtis W McGraw, Vice-President and Treasurer; Eugene Duffield, Senior Vice-President, Publications Division; Nelson Bond, Vice-President and Director of Advertising; J E Blackburn, Jr, Vice-President and Director of Circulation; Joseph A Gerardi, Secretary. Subscription rates: Single copy 35 cents. In the United States, $6 a year, $9 for two years, $12 for three years. Canada, $7 for one year, $11 for two years, $14 for three years. (Canadian money at par.) Pan-American countries, $15 for one year, $25 for two years, $30 for three years. All other countries $20 for one year, $30 for two years, $40 for three years. Entered as second-class matter, November 16, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in U. S. A. Copyright 1949, by McGraw-Hill Publishing Company, Inc. Permission required to reproduce any of contents. Cable address McGRAW-HILL, New York. Member ABP Member ABC

LARGEST generating unit, 81,250 kw, in New England has been dedicated by Boston Edison Co. Following dedication ceremonies Vice-President John T. Ward discusses the new unit's boiler control board with Ralph D. Booth, Jackson & Moreland, consulting engineers for the company, and H. W. H. Wellington, center, superintendent of production for the utility

Struggle on Government Ownership Must Be Led by Utilities, IUA Told

ELECTRIC UTILITY management can and must take the lead in combatting the trend toward government ownership in the United States.

That was the message presented by principal speakers at the convention of the Iowa Utilities Association, Oct 10-11, at Des Moines.

Striking the keynote of the sessions, attended by more than 300, William I. Nichols, editor of *This Week*, asserted that utility management can demonstrate that private ownership, under proper regulation, meets the public's needs and does it better than government ownership.

Nichols noted that business has been going through a cycle, progressing gradually from complete freedom of private enterprise, to private ownership under government regulatory control, finally to government ownership. This trend was carried to completion in Great Britain, he pointed out, but it can be reversed. Belgium, for example, dabbled with a socialization program after World War I, then gave it up as unworkable.

Employee relations, as an "integral part of public relations," fit into the ownership fight, Merrill E. Skinner, vice-president of Union Electric Co of Missouri, declared. What employees think about government ownership is important to a utility because the public expects utility workers to know more about the subject. Thus, it behooves management to see to it that employees are well informed.

Union Electric has adopted a five-point employee relations program to disseminate information on ownership and other management problems, Skinner revealed. The company has set up the following activities for this purpose:

1. A public power reference library where employees can get factual data on ownership.

2. A speakers' bureau to help employees interested in public speaking. This also helps to meet outside requests for company speakers.

3. Displays in the main office building and in windows for the benefit of employees and the public.

4. Employee advertising panels which consider ideas for institutional advertising.

5. Employee information panels which offer instruction in the broad field of business economics.

Edwin F. Vennard, vice-president of the Middle West Service Co, told the group that increases in taxes and the costs of labor, fuel, and supplies were approaching the point at which they would offset improvements in industrial techniques. This will result in an increase in the cost of producing energy. The industry's percentage of return on investment thus has dropped with the growth of its expansion program. Only two methods of obtaining a higher return are readily available. These are increased utilization of investment through improvement of load factor and reduction of reserve to a safe minimum, or an increase in rates.

Utilities Keep Building; Atomic Power Distant

The distinct possibility that nuclear reactors will become practical and economical has had no retarding effect on the $9-billion, five-year expansion program of the electrical utility industry. So the National Coal Association convention in New York last week was told by Philip Sporn, president of American Gas & Electric Service Corp.

His best guess was that the experimental phase of the nuclear power investigation now in progress will take from 3 to 5 years and "within 3 to 5 years after that (that means 6 to 10 years from now) we may have a reactor producing electric power. Four to five years after that (10 to 15 years hence) we may have some commercial generation of nuclear power . . . operating more or less regularly day in and day out."

In the interim, Sporn said, there will have to be a solution of the breeder problem because upon that solution depends the probable cost of building and operating nuclear power plants. In the absence of tangible data on this point reputable authorities have estimated investment costs all the way from $140 to $1,000 per kw. On top of this are all the technical problems of material-adequate and appropriate for constructing the reactors.

Sporn, who is chairman of the industry committee collaborating with the Atomic Energy Commission, mentioned that the modern steam turbine and boiler require some 27 different steels, each tailored specifically to perform a particular part of the task of steam generation and utilization. In addition to all these material properties the reactor must be constructed of material that will withstand neutron bombardment, gamma rays, beta rays, and other fission emissions.

Against this broad program AEC has allocated more than $200 million to solve the technological problems which stand in the way of industrial application of atomic energy. When that is achieved, some of the industries which already use large quantities of electrical energy per week per worker are likely to be the earlier beneficiaries.

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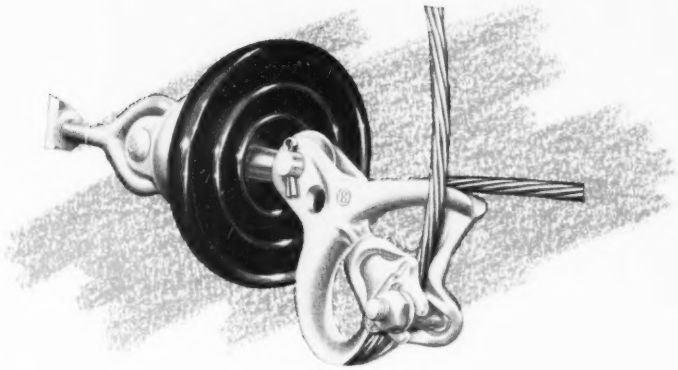
Vepco Gives Pay Raise

Professional, technical, and scientific workers in the Virginia Electric & Power Co system got a 5% wage boost in the contract recently signed by the utility and the Utilities Workers Union. Another contract involving clerical and office workers still is pending.

Are you going to build your primary deadends once or twice within the next few years?



Figures recently published to the Electrical Industry show that, by the end of 1949, residential power load will have increased ten per cent *in a year's time!* From 1938 to 1948, this increase amounted to 82 per cent, and current information proves it hasn't leveled off. Some well-informed men talk in terms of a possible 500 per cent over today's demand in the clearly-predictable future.

What is the answer in terms of equipment? How can this power be delivered to residential users? Reconstruction of the entire urban distribution plant is one answer. The more practical and popular approach is higher voltage. Here, much of the existing equipment can be retained, but every deadend point on the system will require revision if built to older low voltage standards. This rebuilding must usually be done hot, in the crowded area of busy pole tops. It can be costly and somewhat hazardous.

There's a better way. Build all present deadends now--regardless of voltage--for the inevitable increase. Build just once instead of twice. It will easily save you half your ultimate deadending expense when local power demands require higher distribution voltages.

Experience has proved the most practical deadend to be made from a six-inch suspension unit and a suitable strain clamp. The O-B unit with a Universal Strain Clamp is being used by the hundreds of thousands for this service; continuously repeating orders testify to the complete satisfaction of this combination.

Build just once--and build the best--with this O-B deadend assembly.

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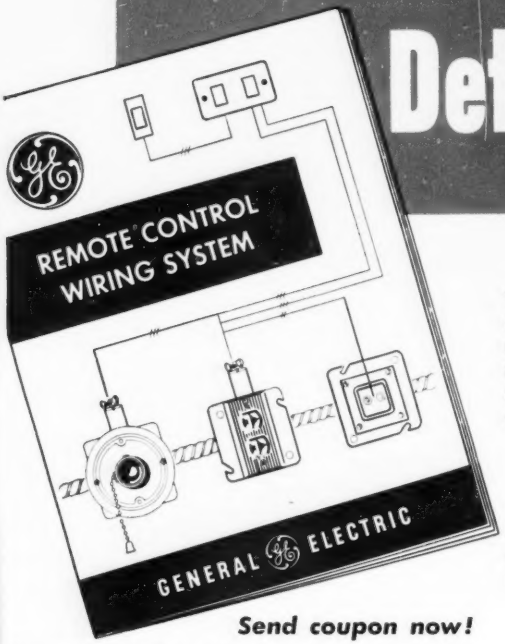

Explains All Components

This new bulletin on the General Electric Remote Control Wiring System illustrates and explains all materials necessary for installation of this new wiring system. Describes relay, switches, plates, boxes, transformer, and remote control wire that make this system easy to install—convenient to use.

Outlines Code Requirements

National Electrical Code requirements covering remote control wiring are fully outlined in this new booklet. Installations within these requirements are explained.

Illustrates Typical Installations

Diagrams and photographs make application of the General Electric Remote Control Wiring System fast and easy. You'll want this booklet to help you plan your installation.

Send coupon now!

This new 16-page booklet is packed with the facts you'll want to know about this exciting, new General Electric remote control wiring system. To get your free copy, fill in and mail the coupon below.

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Please send me the new free booklet "GE Remote Control Wiring System."

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For Your Prospects. Your prospects will enjoy the new 4-color booklet "All About a Magic Wand for Your Home." By means of clever illustrations it explains the idea of the General Electric Remote Control Wiring System—sells them on the advantages of having it installed.

Pick up copies of this booklet from your General Electric distributor.

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15 Year Repair Bill—

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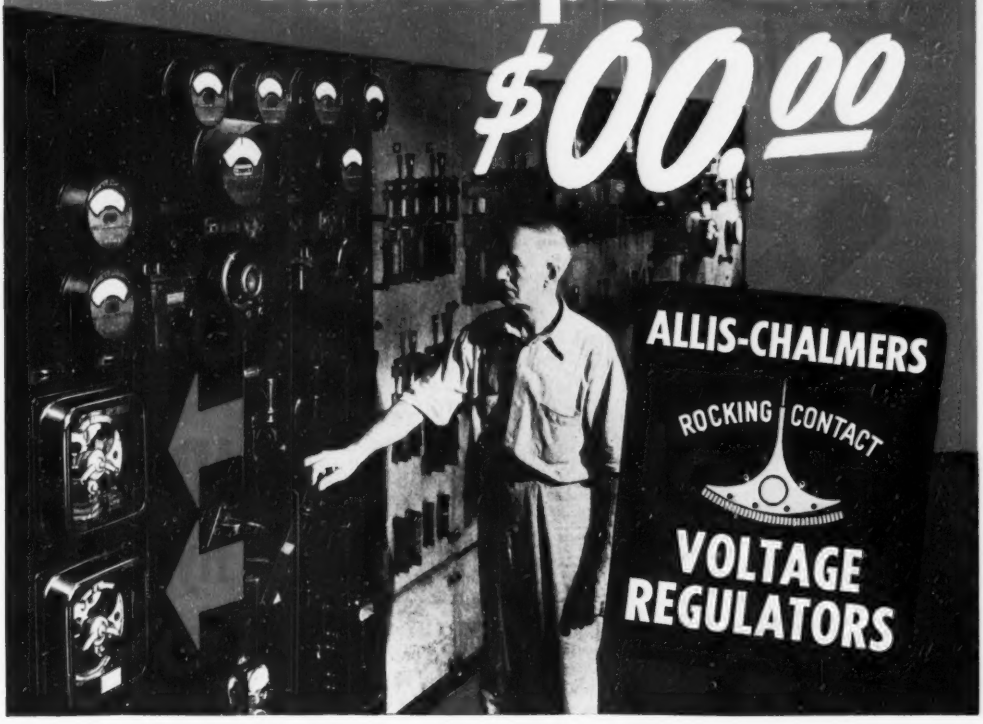

FIFTEEN YEARS OF CONTINUOUS SERVICE controlling constant generator voltage for a large municipal sanitarium — not one dollar spent for maintenance — and still no sign of needed attention . . . That's the record of these Allis-Chalmers Rocking Contact Generator Voltage Regulators!

It's the kind of proven dependability and low maintenance you can get with Rocking Contact Regulators. These units have no vibrating contacts and no gliding friction . . . no complex adjustments to make — *simplicity* that means years of trouble-free service for you.

And they are precision built for *Instant Response* and *Accuracy*. Contact sectors are supported in jeweled bearings . . . rock on carefully machined commutator segments heavily plated with silver for reliable, long-life accuracy.

Rocking Contact Voltage Regulators are available for both a-c and d-c generators of any size and speed, for either paralled operation or unit control. Write direct for recommendations, or call your nearby A-C office. A-2797

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SYNCHRO-OPERATOR — Automatically synchronizes alternating current generators, tie lines, synchronous condensers, etc.

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REGULEX CONTROL — Used where the features of a rotating type regulator are desired.

Regulex is an Allis-Chalmers trademark.

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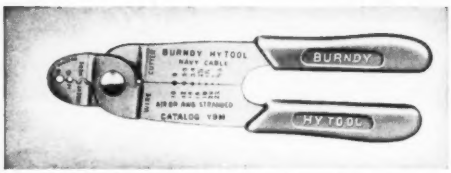
Tools that replace the Torch...

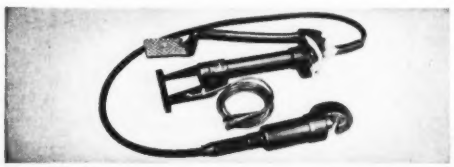
Burndy Hydraulic Hypress—Y34-A. Hand-operated—weight 9 lbs.; 18,000 lbs. pressure; for conductors No. 6 through 500 Mcm. Used to install Hylugs, Hylinks, Hytaps and overhead Hysplices.

BURNDY
Hytools and Hypresses



Burndy All-Purpose Hytool—Y9M. Hand plier with wire cutter and stripper. For conductors No. 22 through No. 10.

Burndy Hytool MY29. Hand-operated—for conductors No. 8 through 4/0 without change of dies.



Burndy Hydraulic Hypress—Y34-B. Foot-operated type; 18,000 lbs. pressure; for conductors No. 6 through 500 Mcm.

WHY fuss with solder when making electrical connections? Efficient, rapidly operated Burndy HYTOOLS and HYPRESSES indent one-piece, pure copper HYDENT connectors onto all conductors from #22 through 2000 Mcm.

With this modern HYDENT connecting method you assure uniform depth of indent, and *strong, efficient electrical connections, every time.* But more, you make substantial savings on *every* connection. You just insert the conductor into the connector barrel, and indent with the HYTOOL. *Nothing simpler . . . nothing quicker . . . nothing surer!*

No matter what your requirement, Burndy has the right tool for your connecting needs . . . hand, portable or bench types; manual, hydraulic or pneumatic operation. Get all the facts. Send for Burndy HYDENT Catalog Y46 today.

Hylugs—Hylinks—Hysplices are a few of the many Hydent connectors.

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WESTERN BRANCH: Vernon 11, California
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AEIC-EEI METER COMMITTEES examine a display panel depicting Sangamo's metering developments from 1899 to 1949. Included are H. A. Brown, Rochester Gas & Electric Corp, chairman of the EEI group; Charles Greenley, Rumsey Electric Co; George B. M. Robertson, Philadelphia Electric Co, chairman of the AEIC group; F. H. Rogers, Consolidated Gas, Electric Light & Power Co of Baltimore; R. B. Swallow, Public Service Electric & Gas Co, Newark; F. A. Redding, Southern California Edison Co; Charles V. Morey, Consolidated Edison Co; E. P. Cornelly, Eastern Specialty Co; E. A. Brown, Atlantic City Electric Co; Henry Duus, Rumsey Electric Co; and S. K. Brown, Potomac Electric Power Co

AEIC and EEI Meter Committees Meet Concurrently at Springfield

WHAT CRITERIA to follow in deciding whether to scrap an obsolescent meter or rehabilitate it and keep it in service was a major theme at the sessions of the AEIC Metering and Service Methods Committee in Springfield, Ill., Oct 3-5.

A basic formula for the purpose was presented by A. L. Carvill, General Electric Co, who showed how it could be evolved into curves and a slide-rule to ascertain whether the cost of retiring an old meter is less or more than the cost of keeping it in service for a few more years. All take into account various interest rates, probable life values, and cost of repair and modernization. The paper will appear in full in ELECTRICAL WORLD.

Practices of a large number of utilities as to meter retirement were summarized by P. B. Garrett, *Electric Light & Power*. He said 13% of present meters were made before 1920 and 31% between 1920 and 1930; only 31% can be called modern.

A strong plea for collaboration of all segments of the industry in guiding the formulation of local ordinances and codes was made by L. D. Price of NEMA.

The EEI Meter and Service Committee met during the same days and both joined in a testimonial dinner to the host Sangamo Electric Co, which is celebrating its 50th anniversary.

At the EEI Meter Committee Meeting a subcommittee report by F. A. Redding, Southern California Edison Co, showed that changes made by meter manufacturers, particularly by avoiding contact of dissimilar metals, have considerably improved the corrosion performance of watthour meters. The group will extend its studies to associated devices.

Whether the formalized procedure for testing a new meter for insulation breakdown, as tentatively outlined by A. B. Craig, Boston Edison, should not stipulate the maximum milliamperes involved was a safety query raised by R. B. Swallow, Public Service Electric & Gas.

A. J. Allen, Consolidated Edison Co, aroused considerable interest with his expressed desire for a split-core window-type metering current transformer that could be placed around a bus without disturbing it. Growing loads are the justification for this economy measure.

To the Electrical Equipment Committee will be referred the desirability of including metering compartments in the specifications for metal-enclosed switchgear.

The new edition of the Metermen's handbook will be available by Jan 1.

Sangamo representatives told the committees in joint session that a group of developmental models were being prepared for consideration, including differential registers and demand register with time control and a combination register for simultaneous demand and excess energy. Tooling is proceeding for a combination socket-type watthour-thermal demand meter.

Federal Power Spenders Get $1 Billion in Funds

Federal power proponents suffered a final-round defeat last week as Congress finally wrapped up for delivery to the White House its appropriations for the Department of Interior and the Army Corps of Engineers.

Sustained by Congressional conferees were the Senate cuts in the Interior Bill which bar a Bureau of Reclamation steam plant and transmission lines in California's Central Valley and a transmission line in Colorado.

The two biggest federal power spenders got more than a billion dollars, split this way:

Reclamation got its biggest appropriation in history, $354 million for fiscal 1950. With carry-over funds from last year, Reclamation will have more than $400 million to spend. It will spend an estimated 1% of the government's 1950 budget—1¢ out of every federally spent dollar in the fiscal year.

Army Engineers were granted $664 million, with $535 million earmarked for construction, $113 million for rivers and harbors, and the remainder for flood control.

In addition to Reclamation's record figure, the $584-million Interior total includes: $30 million plus in cash and more than $16 million in contract authority for Bonneville Power Administration; $4 million cash and $5 million contract authority for the Southwestern Power Administration; and $70,000 for Southeastern power marketing.

The $61 million Reclamation received for the Central Valley project included no funds for the Delta steam plant, Elverta switchyard, and some other transmission lines. No funds were granted for the Estes-Valmont transmission line in the Colorado-Big Thompson Project.

•

Seattle Will Modernize Its Diablo Hydro Dam

Modernization costing an estimated $400,000 is planned for the Diablo hydroelectric dam on the Skagit project of Seattle, Wash., City Light. Superintendent E. R. Hoffman has asked the City Council for authority to spend that amount for paving spillways, overhauling steel gates, and other work.

City Light expects to have its Gorge powerhouse back in operation this fall, after a summer closure to permit tunnel repairs and construction preliminary to addition of a new generator scheduled for service late in 1951.

Program of EEI Equipment Group Includes Various Technical Topics

Discussions that ranged widely and revealed occasional differences of opinion marked the 49th meeting of the Electrical Equipment Committee of Edison Electric Institute, Oct 3-4, at Schenectady. Subjects covered during the two open sessions included care of insulating oil, design of substations for safety, control room lighting, and expansion of the East River Station of Consolidated Edison Co of New York.

The committee members were guests of General Electric Co for two days following the meeting. They visited the company's new turbine plant and the Knolls Research Laboratories. The committee also attended the dedication of GE's High Voltage Laboratory at Pittsfield, Mass., Oct 6.

Oil Condition Predicted

At the first open technical session, E. F. Walsh, Narragansett Electric Co, showed how power factor and interfacial tension data for an insulating oil could be correlated to obtain an index, called "quality factor," from which condition of an oil could be predicted. Discussers R. G. Call, American Gas & Electric Service Corp, and S. C. Townsend, Pennsylvania Power & Light Co, both noted the proportionality between Walsh's quality factor and interfacial tension. Both felt data based on power factor and interfacial tension alone might be misleading unless supplemented by other tests, notably for neutralization number, which Walsh found "of little value."

Describes East River Station

A. M. de Bellis, Consolidated Edison, described electrical design features being utilized in expanding East River Station to an ultimate capacity of 1,100 Mw through addition of 700 Mw. The new capacity will supply enlarged network areas at 69 kv. In the past such areas have been supplied at 13 kv. In expanding East River Station the high proportion of the project cost represented by switching and other equipment in electrical galleries led to elimination of all busing and switching at generation voltage and to the adoption of 69-kv switching. Another innovation was use of 69-kv isolated-phase metal-clad switchgear for the first time at this voltage. The result was a much less expensive and simpler switch gallery, de Bellis said.

N. E. Brown, Buffalo Niagara Electric Co, urged station and substation designers to concentrate on creating an "ideal design" in which exposure to accidental contact with live parts would be held to a minimum. He noted that 30% of utility industry fatalities between 1941 and 1947 occurred in stations and substations. To reduce this percentage he asked designers to simplify circuits, provide working clearances for workmen, and eliminate obvious hazards. In discussion J. W. Miller, Detroit Edison Co, and R. N. Southgate, Public Service Electric & Gas Co, Newark, described the systems of barriers and potential testing procedures used by their companies to protect operators and workmen against mental lapses.

Correlation of weather variables, such as temperature and daylight intensity, with system electric load is used on the Consolidated Edison system only to interpret day-to-day load variations in terms of basic system load. Attempts to use weather forecasts to predict future load have been generally unsuccessful, Frank Brower said in presenting a paper on the subject prepared by J. J. Drummond, also of Consolidated Edison Co.

•

Utility Operating Revenues Advance 6.1% in July

Electric operating revenues of the larger privately owned electric utilities in the United States in July, 1949, were $357,025,000, compared to $336,567,000 in July, 1948, an increase of 6.1%, the Federal Power Commission has reported.

Revenue deductions (including operating expenses, depreciation and taxes) were $284,881,000 or 2.8% over those of July, 1948.

Gross income, including other utility operating income, amounted to $76,266,000, an increase of 20.2% for the month. Net income was up 25% to $54,467,000 from the $43,559,000 reported for July, 1948.

•

UWU Wins Pay Raises

Ohio Edison Co and the Utility Workers Union of America, CIO, have agreed to a new contract retroactive to June 30. Employees are to get wage raises of 3 to 8¢ an hour and 30 days' sick leave with full pay and 20 with 70% pay. Other clauses regulate working schedules and vacations, and bar strikes. Pensions are to be arbitrated.

James R. Kearney Dies, Headed Own Corporation

James R. Kearney, Sr, founder and for 14 years president of the James R. Kearney Corp, St. Louis, Mo., died on Oct 4 in that city at the age of 76. Mr Kearney had been chairman of the board of the Kearney corporation since 1940.

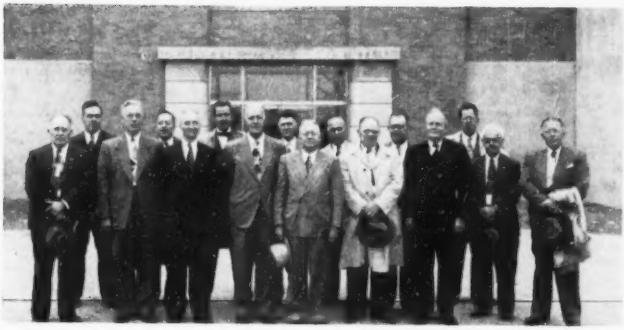
His direction of the rise of a six-man firm of 1926 to one doing several million dollars' worth of business in

JAMES R. KEARNEY, SR

four years gained him the nickname of "the little giant of the electrical industry." Besides being an inventor, Mr Kearney established a reputation as a financier when he acquired three rival companies in 1931, doubled the capacity of the main factory in St. Louis, and acquired a Canadian factory without resorting to any bank or other financial loans.

A pioneer in the electric power field, Mr Kearney began work in power plants at the age of 17. His many contributions to safer, more efficient electrical equipment came from familiarity with the problems facing the early electrical worker through his associations as lineman, construction foreman, and superintendent of the old Brush Electric Co, Topeka, Kan., and the Topeka Edison Co.

Later Mr Kearney became identified with the Western Electric Co, now Graybar. He subsequently joined the W. N. Matthews Corp, St. Louis, as a salesman. At the time of his resignation, he was manager of electrical sales in the United States, Canada, Mexico, and Cuba. In 1926 he organized the James R. Kearney Corp at St Louis to manufacture overhead and underground utility equipment. Under his leadership the continued growth of the corporation has made it one of St. Louis' largest locally conceived enterprises.



MEMBERS of the Prime Movers Committee of Pennsylvania Electric Association at Sunbury

Sunbury Plant Described at PEA Group Meeting

Sunbury Plant, television for power plants, and the economics of reheat and of soot-blowing were primary themes for 60 members and guests of the Prime Movers Committee of the Pennsylvania Electric Association, Oct 6-7, at Sunbury.

M. D. Engle, R. A. Hallman, H. F. Hatfield of the Pennsylvania Power & Light staff, A. R. Weismantle of Foster-Wheeler, and Carl Schabtach of General Electric contributed to a discussion of the refinements and equipments. Hallman and Hatfield used the station model to explain the ground plan layout, structural simplification, and the disposition of equipment. The ample 13,000-by-1,300-ft site affords 700,000 tons storage of bituminous, prepared anthracite, or anthracite silt.

A car dumper is served by a stored-steam locomotive, and an extensive spreading, reclaiming, and conveying layout in conjunction with bunker segregation delivers the fuel to the two 60-75-Mw units (one now running). Weismantle gave details of the boilers and pulverizers to handle the alternative or mixed fuels with their propensities for slagging and grindability. Both mechanical and electrostatic dust collection are used for overall efficiency of 96%. Boiler and control board instruments are in functional configuration with nimic setup. Sliding trolley beams have been provided for scaffold operations in the boiler. All-grating floors are used. In the construction, grading, erection, and equipment installations the use of mechanized equipment and heavy cranes meant that only the generator stator was rigged into position.

Potentialities of wired-televi-ion in power stations and industrial plants were outlined by A. P. Good, Diamond Power Specialty Corp, in connection with a demonstration of the Utiliscope. He mentioned viewing boiler gage glasses, monitoring flames and pilots, remote observation of slag and smoke emission along with flow of fuel. For distances greater than say half a mile, carrier or microwaves can be used. W. J. Fitzburgh of the same company had shown a typical annual cost of 85% as much using automatic air instead of automatic steam for soot-blowing.

T. Y. Mullen, Gilbert Associates, cited from Titus Plant of Metropolitan Edison Co an expected better heat rate of 8.9% for an added net outlay of $525,000 and an annual saving of $88,-875 using reheat in connection with each 66-75-Mw unit.

•

Oregon City Prepares for Municipal Power

The City Council of Springfield, Ore., has entered into an agreement with Pacific Telegraph & Telephone Co to share equally in pole erection costs if the municipality puts in an electrical distribution system. The voters of Springfield recently voted in favor of establishing a municipal power system.

At the same time the Council adopted a resolution favoring a sign-up campaign to lure customers away from the Mountain States Power Co, which now serves the city. Mayor B. P. Larson announced that the city will be in the power business by January 15, 1950.

•

TVA Moves Division

Tennessee Valley Authority's property and supply division, with 150 employees, has been transferred from Knoxville to Chattanooga. Functions of the division include buying of real estate and selling of surplus land, the purchasing of materials and equipment, and filling office needs.

Congress Set to Okay Rural Telephone Loans

Rural Electrification Administration is all but in the telephone business. At most, the agency probably will have to wait only a few weeks for the authority—if not the machinery—to make loans for rural 'phone service.

Already passed by the House, legislation amending the Rural Electrification Act to this effect cleared the Senate on Oct 5. Differences between the House and Senate versions of the bill are being ironed out by a conference committee. Failure of the conferees to work out a compromise conceivably could delay the 'phone loan measure until next year, but Congressional experts consider this unlikely.

Major points of difference between the House and Senate bills include a dual definition of the word "rural" as applied, first, to an area and, secondly, to a telephone system. The House had no part of either definition. But the Senate described a rural area as a community of 1,500 or less inhabitants or "any suburban residential area adjoining any such city, village or borough." The REA Act somewhat more vaguely contains the 1,500-inhabitants definition. It has been construed to limit REA electrification loans to such areas.

But the Senate also directed that no loans be made to telephone systems with more than 2,500 subscribers. This may make the area definition meaningless, for both the telephone bill and the REA Act, if approved by the House. Or it may be interpreted to keep REA-financed improvements in areas with less than 1,500 inhabitants, though the borrower may have more subscribers—up to the 2,500 limit—elsewhere.

Lending authority up to $25,000,000, plus $250,000 for administrative expenses, for the new telephone program are in a pending appropriations bill. REA gets the money when—and if—the authorization bill is enacted.

•

Compact Ends Duplication

Verde Electric Cooperative and Arizona Power Co have reached an agreement on distribution of power in Oak Creek and other northern Arizona communities. The two will exchange certain lines, thus ending duplication of facilities, and Arizona Power will serve the co-op with power at Sedona, Smelter City, and Middle Verde, enabling the cooperative to discontinue Diesel generation. Both will request lifting of a superior court injunction, preventing the co-op from building additional facilities.

Middle South Soon to Be on Its Own, Succeeds Electric Power & Light

A NEW regional holding company, Middle South Utilities, Inc, soon will be standing on its own feet. And those feet—Arkansas Power & Light Co, Louisiana Power & Light Co, Mississippi Power & Light Co, and New Orleans Public Service, Inc—seem firmly planted in the soil of one of the nation's fastest growing regions.

The parent company, Electric Bond & Share, has announced it will sell its entire holdings in Middle South, 803,229 common shares, as part of its divestment program under the Public Utility Holding Company Act of 1935. The shares will be offered to Bond & Share's common stockholders at $12 on a 1-for-8 basis. Proceeds will be used to reduce the parent's $12 million of bank loans outstanding to about $4 million.

Bond & Share acquired its Middle South stock last July in reorganization of a subsidiary, Electric Power & Light Corp. Middle South had been incorporated in May under Florida law to take over the latter's electric holdings. Electric Power common and preferred stockholders, including Bond & Share, received shares of Middle South and United Gas Corp in exchange for their common and preferred stock in the reorganizing firm and as residual assets.

As successor to Electric Power & Light, Middle South acquired an interconnected system serving more than 500,000 customers in more than 900 communities. Middle South's president, Edgar H. Dixon, formerly was president of Electric Power, and five of the nine directors served on its board.

Middle South Utilities has 4,960,000 shares of no-par common outstanding, held by approximately 14,000 individual and institutional investors. Authorized capitalization is 7.5 million shares. Its capital is invested principally in the four operating utilities. Middle South holds 95.2% of New Orleans Public Service common and all common stock of the other three and of Gentilly Development Co, Inc, which owns an undeveloped tract of land in New Orleans.

Growth of Middle South System
(Electric Service)

	1938	1948
Communities Served (No.)	691	907
Line (Miles)	13,780	33,870
Customers (No.)	279,857	578,761
Revenues ($)	25,551,443	61,018,479
Residential & Rural ($)	8,071,725	20,376,752
Commercial ($)	7,460,659	17,622,223
Industrial ($)	7,255,688	15,799,301
All Other ($)	2,763,371	7,220,203

EDGAR H. DIXON

Middle South executives are optimistic about the future of their expanding region. During 1940-48, value of manufactured products increased 385% and retail sales 265% in the Middle South, as compared with 272% and 186%, respectively, for the United States as a whole. Cash receipts from farm marketing increased 343% (273% for the U. S.); value of imports, 336% (U. S., 97%); and energy production by electric utilities, 159% (U. S., 121%).

Sales and earnings of the four operating subsidiaries are holding at high levels. Output last month was running 15% ahead of the like period a year ago, with a less than 3% increase for the rest of the nation's light and power industry. Sales to all classes of customers are greater in 1949 than for the like period of 1948. Cutbacks by large industrial users have been offset by addition of new customers.

Reflecting the level of sales and revenues, Middle South's management has revised upward its estimate of 1949 earnings. Indications now are that "pro forma" earnings this year may equal $1.90 a share, based on operating company earnings and after deducting estimated parent company expenses. The holding company's first quarterly dividend, paid Oct 1, was 27½¢ a common share, indicating an annual rate of $1.10.

FINANCIAL BRIEFS

Empire District Electric Co, Joplin, Mo., has registered with Securities and Exchange Commission 100,000 shares of its $10 par-value common stock, to be offered to the public at a price to be filed by amendment. Proceeds will go for construction.

Electric Bond & Share Co has declared a dividend on its common stock, subject to SEC approval. Payable Dec 30 to holders of record of Nov 30, the dividend will be in common stock of Middle South Utilities at the rate of 1/35th share for each share of EBS common. Based on the market price of Middle South, this is equivalent to about 50¢ a share.

A $25-million-par issue of cumulative preferred stock has been registered with SEC by Public Service Electric & Gas Co, Newark, N. J. Public offering is scheduled for Oct 19. The new issue will constitute the utility's only preferred stock outstanding, with the exception of 58 shares of 7% cumulative preferred.

A plan for reorganization of Washington Gas & Electric Co has been confirmed as "fair, equitable, and feasible" by Federal Judge Alfred C. Coxe. It provides for distribution of 30 shares of Washington G&E common stock for each $1,000 of the present 6% bonds and 20 shares of Southern Utah Power Co for each $1,000 bond of the subsidiary company.

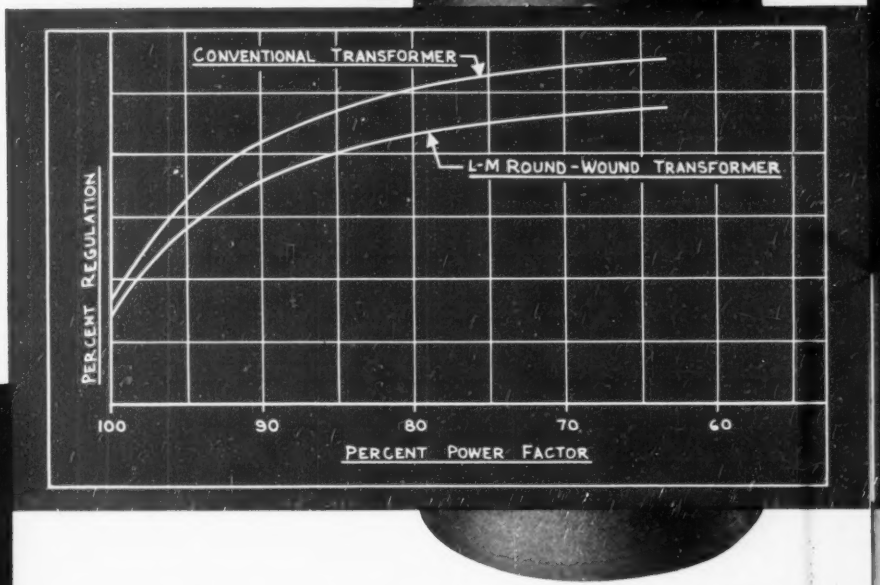
Idaho Power Co has asked FPC's okay to issue up to $12 million in first mortgage bonds. The issue would be either an addition to the utility's 2¾% series due Feb 1, 1977, or a new 2¾% series of 30-year bonds due Nov 1, 1979.

Puget Sound Power & Light Co, Seattle, has redeemed for sinking fund purposes $7,357,000 principal amount of first mortgage bonds 4½% series due Dec 1, 1972. Redemption was at 101¼ plus accrued interest.

SEC RULINGS

Old Forge Electric Corp, Syracuse, and Central New York Power, also Syracuse, have received SEC clearance on the transactions involved in their merger, the former into the latter. Under the proposal, Central would issue 5,000 additional shares of its $20 par common stock to its parent, Niagara Hudson Power Corp, in echange for all of the 6,300 outstanding shares of Old Forge common stock held by Niagara Hudson. Thereupon, Old Forge would be merged into Central. (Release No. 9337).

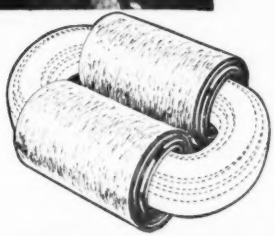
"Better regulation at all power factors..."



ROUND WOUND

Robert P. Thompson,
Transformer Design Engineer,
Line Material Company,
Zanesville, Ohio

a major advantage of L-M ROUND-WOUND transformers," says ENGINEER THOMPSON



Continuous wound core, which is never cut, unwound, or disturbed in any way after annealing, because the long round coils are wound directly onto the core by L-M's ingenious Round-Wound method.

"There's no patent on designing good regulation into a transformer," says Mr. Thompson. "The problem is to get good regulation *without* sacrificing other desirable characteristics, *and* without increased cost to the user.

"We are able to solve the problem with our wound core which is not cut, unwound or disturbed in any way after annealing, resulting in uniformly stable core loss and low exciting current. The compact cruciform cross section shape of the Round-Wound core enables the designer to use long round coils with fewer turns and smaller mean turn diameter, thus gaining lower resistance and reactance values. Uniformly low impedance with improved regulation at all power factors—both recognized features of real significance under today's operating conditions—are outstanding features of the Round-Wound transformer."

Want to know more about the savings "Round-Wounds" offer the utility company? Want to know more about how L-M Round-Wound transformers are designed, why they give "Balanced Performance" and operating benefits to the user, better service to the customer? Ask the L-M Field Engineer for this fact-packed bulletin No. 16-G-1, or **write Transformer Division, Line Material Co., Zanesville, Ohio.**

LINE MATERIAL Transformers

Complete Coordinated Equipment For All Distribution Requirements

LM

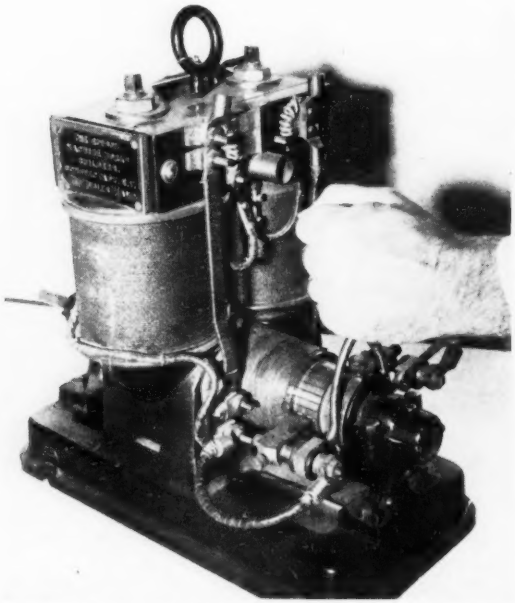
Not Only the Incandescent Lamp

EDISON first experimented with platinum as a filament for incandescent lamps. Harry Gumaer, Edison associate, examines early model

FROM COAST TO COAST electric utilities on Oct 21 will celebrate the 70th anniversary of the invention of the incandescent lamp. The companies will use newspapers and the radio to tell the public how this invention led to a better world for millions of people and how the industry itself has expanded to serve the public.

But the "wizard of Menlo Park" had many other inventions—over a thousand, but not all pertaining to the utility industry. His versatility is evident when one views the collection of Ward Harris, a San Francisco business man. This is one of the greatest collections of Edisonia in existence. It consists of over 4,000 items. Harris is still adding to it. He believes that he has spent over $50,000 in building up the collection and admits that he has no idea of its value. At present the treasures are housed in a vault in the basement of his store, but he plans to establish a museum which would be open to the public.

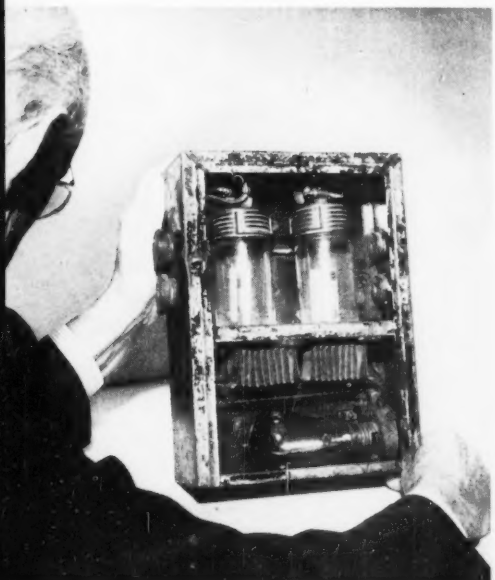
Harris has been collecting Edisonia for 27 years. He began when working in Spokane as a salesman for the Edison Co. He met Edison at a sales meeting at the home office. Later he met Mrs Edison, whose friendship was of great value in aiding him to obtain items. Harris has a good representative selection of either the original experimental models or of Edison's first production models.



THIS early commercial Edison generator was manufactured by the Edison Machine Works, Schenectady, N. Y. Its rating was 110 v, 2.3 amp

START of Edison's fortune was this "universal printer," which he sold for $40,000 in 1869. Money was used for Menlo Park laboratories

MANY INSTRUMENTS used by the electric industry were either invented or developed by Edison. Left is a double-lamp voltmeter holding some early Edison lamps. In center is a mercury circuit breaker experiment. At right is an ammeter. All were primitive but sound in principle

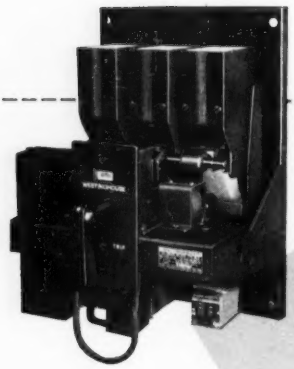


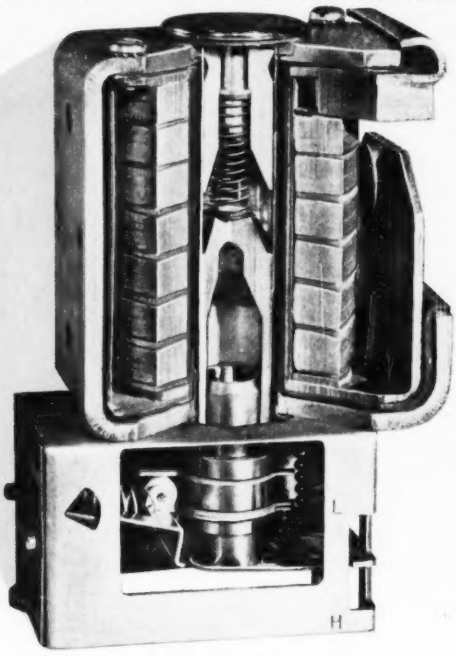
ARRY GUMAER, Harris employee, holds one of the first electrical eters. Light bulb and grid in bottom kept chemicals from freezing

PRODUCTION model of 6-v electric fan doesn't look safe, but it may have started appliance industry, in which Edison was interested

YOU CAN BE **SURE**.. IF IT'S

Westinghouse





TRIPS.. **to protect**

DELAYS.. **to select**

the NEW DB Breaker Tripping Device

Here's a new overcurrent device that trips instantaneously on fault currents reaching a predetermined value . . . yet delays tripping on overcurrent caused by motor starting or other overloads of short duration. Also available—selective operation that causes only the breaker nearest a fault to trip. Breakers nearer the power source keep current flowing in unfaulted parts of the circuit.

This tripping device is the "mainspring" for the new Westinghouse DB Breaker—a breaker that's smaller, more dependable, more flexible, and has a longer life. Get top breaker performance, plus "one-unit" overcurrent protection, in your low-voltage system. Install the DB.

Here's the COMPLETE Story . . .

Get answers to your questions, plus complete information from the new DB Breaker Booklet. Ask your Westinghouse representative or distributor for B-4067. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-60720

Westinghouse

"DE-ION" CIRCUIT BREAKERS

New Type DB

Output Percent Change Drops to —0.6 Under '48

The effects of the steel strike were shown in the electric output figures for the week ended October 8, when the percent change from the corresponding week of 1948 went into the minus column, 0.6%. This is the first time a percent decrease has been reported since August, 1946.

The amount of electrical energy distributed by the light and power companies of the country amounted to 5,449,891,000 kwhr, comparing with 5,481,632,000 kwhr for the week ended Oct 9, 1948. For the week ended Oct 1, 1949, the output totaled 5,521,238,000 kwhr.

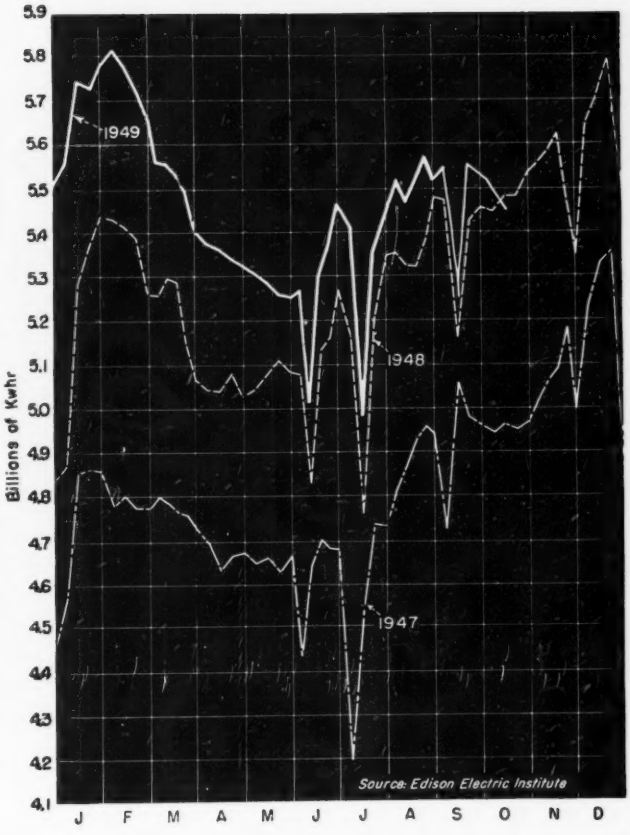
The New England States remained in the plus column, but only with a 1.6% increase, which compares with a 3.4% increase the preceding week.

Weekly Output, Millions Kwhr

1949		1948		1947	
Oct 8	5,450	Oct 9	5,482	Oct 11	4,958
Oct 1	5,521	Oct 2	5,449	Oct 4	4,935
Sept 24	5,556	Sept 25	5,461	Sept 27	4,956
Sept 17	5,579	Sept 18	5,426	Sept 20	4,977
Sept 10	5,258	Sept 11	5,166	Sept 13	5,053
Sept 3	5,544	Sept 4	5,470	Sept 6	4,721
Aug 27	5,523	Aug 28	5,478	Aug 30	4,940
Aug 20	5,579	Aug 21	5,391	Aug 23	4,953
Aug 13	5,530	Aug 14	5,318	Aug 16	4,923
Aug 6	5,466	Aug 7	5,319	Aug 9	4,874
July 30	5,518	July 31	5,352	Aug 2	4,806
July 23	5,462	July 24	5,342	July 26	4,730

Percent Change from Previous Year

	Oct 8	Oct 1	Sept 24
New England	+ 1.6	+ 3.4	+ 3.1
Mid-Atlantic	— 3.1	— 2.3	— 2.7
Central Industrial	— 8.5	— 4.6	— 3.8
West Central	+ 2.5	+ 2.7	+ 0.4
Southeast	+ 4.0	+ 4.0	+ 5.2
South Central	+ 7.6	+ 8.8	+ 5.4
Rocky Mountain	+ 2.9	+ 6.9	+ 7.2
Pacific Coast	+ 5.6	+ 8.1	+10.8
Total United States	— 0.6	+ 1.3	+ 1.7



MEETINGS

American Institute of Electrical Engineers
Midwest General Meeting, Netherlands Plaza Hotel, Cincinnati, Ohio, October 17-21.

American Welding Society
Annual Meeting, Hotel Cleveland, Cleveland, Ohio, October 17-21.

Pennsylvania Electric Association
Transmission and Distribution Committee, Fort Ligonier Hotel, Ligonier, Pa., October 20-21; Systems Operation Committee, Split Rock Lodge, Blakeslee, Pa., October 20-21; Electrical Equipment Committee, Hotel Edison, Sunbury, Pa., October 27-28; Communications Committee, Benjamin Franklin Hotel, Philadelphia, Pa., November 3-4.

Missouri Valley Electric Association
Accounting Conference, Robidoux Hotel, St. Joseph, Mo., October 20-21.

National Safety Council
National Safety Congress and Exposition, Stevens, Congress, Morrison, Sherman Hotels and the Palmer House, Chicago, Ill., October 24-28; Electrical Equipment Section, Stevens Hotel, October 26-27.

Southeastern Electric Exchange
Sales Conference, Biltmore Hotel, Atlanta, Ga., October 26-28.

National Metal Trades Association
Annual Convention, Palmer House, Chicago, October 26-28.

Edison Electric Institute
Transmission and Distribution Committee, Lord Baltimore Hotel, Baltimore, Md., October 31-November 1.

Institute of Radio Engineers-American Institute of Electric Engineers
Conference on Electronic Instrumentation in Nucleonics and Medicine, Hotel Commodore, New York, October 31-November 2.

National Electrical Contractors Association
Annual Conference, Rice Hotel, Houston, Tex., November 8-11.

National Electrical Manufacturers Association
Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., November 14-18.

Refrigeration Equipment Manufacturers Association
All-Industry Refrigeration and Air Conditioning Exposition, Atlantic City Auditorium, Atlantic City, N. J., November 14-18.

New Jersey Utilities Association
Annual Meeting, Seaview Country Club, Absecon, N. J., November 17-19.

Wisconsin Utilities Association
Joint Annual Convention, Electric and Gas Sections, Schroeder Hotel, Milwaukee, November 21-23.

Exposition of Chemical Industries
Grand Central Palace, New York, N. Y., November 28-December 3.

American Society of Refrigerating Engineers
Annual Meeting, Edgewater Beach Hotel, Chicago, Ill., December 4-7.

American Society of Agricultural Engineers
Winter Meeting, Stevens Hotel, Chicago, Ill., December 19-21.

National Farm Electrification Conference
Stevens Hotel, Chicago, Ill., December 20-22.

Plant Maintenance Show and Conference
Auditorium, Cleveland, Ohio, January 16-19.

Southwest Air Conditioning Exposition
Hall of Agriculture and the Poultry Building, Fair Park, Dallas, Tex., January 23-27.

★ **American Society of Heating and Ventilating Engineers**
Annual Meeting, Adolphus and Baker Hotels, Dallas, Tex., January 23-27.

★ Addition this week

Station Made Standby

Monogahela Power Co's Parkersburg, W. Va., generating station, built in 1915, is now a standby facility. Most of the 26 operating personnel will be transferred elsewhere. The action resulted from completion of the Willow Island Station near St. Mary's earlier this year.

IN THE INDUSTRY

FISCHER BLACK

PUBLIC SERVICE Co of New Mexico knows a lot more about its personnel relations since it made a survey of 547 employees. Most of the 291 replies, reported in its house organ, *Reddy Notes*, are highly gratifying. In fact, the employees expressed great satisfaction with their company, jobs, bosses, and working surroundings.

Since a mail questionnaire was used for this survey, one might imagine that the 256 employees who failed to answer may not agree with those who did. If the results had not been so favorable, and in some companies they would not have been, a more scientific survey would have been in order. It is somewhat surprising how few companies have surveyed their employees. But if this case is a fair test, they can feel at ease except for one very important point.

In answer to the question, "Does the company give you enough information as to policies, etc.?" the answers were as follows:

None	26
Scanty	56
Some information	117
A good deal of information	84

Seventy percent said that the information they were receiving was inadequate. This should provide a challenge to the Public Service Co and cause the remainder of the industry to prick up its ears. What would employees in the other 300 companies answer to this question? Perhaps it will be better to give them the information today and ask the question tomorrow.

Aside from the one case of inadequate company action, the remainder of the answers should cause the Public Service Co to swell with pride. Two thirds say they get credit for good suggestions. Three quarters think the supervision is O.K. In summary here is the way they feel about the boss:

I like my immediate superior	242
I do not like him	16
I like my department head	234
I do not like him	11
I like the Big Boss	251
I do not like him	2

Even though the "Big Boss" is tops, we must assume that he stays clear of some criticism because of non-proximity.

Other significant answers show that practically all employees feel that their jobs are secure and have a high degree of interest in their work; the Credit Union is worthwhile, 234 yes, 5 no; like insurance plan, 268 yes, 14 no; favor an employees' club, 206 yes, 64 no; receive as much new job instruction as they would like, 177 yes, 108 no. This last vote on job instruction amplifies further the need for more information about the company.

The conclusion appears to be that a very receptive group of employees are in an appropriate frame of mind for more information and show a corresponding willingness to boost the industry.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Tower locations can be chosen nicely at dusk by spotting vertical flash-light beams and communicating by walkie-talkie.

Radio-car fires and wiring failures can be minimized by enclosing the radio wiring in appropriate tubing.

Arsenical lead alloys in cable sheaths maintain fair ductility under low as well as high stress conditions.

Boiler firing is about 40% horizontal, 40% vertical and 20% tangential.

Superheat control in installations since 1942 are only 47% damper control.

Bacteria in poorly aerated soils are reduced by sulphate and then accentuate the severity of corrosion; presence of ferrous sulphide indicates the reaction. Anaerobic clay containing organic matter is the worst offender, even where resistivity and pH are not adverse.

Radio reception seems not to be impaired if the antenna is covered with ice unless the ice deforms an antenna of directional pattern.

Precipitation efficiency is enhanced if provision is made for occlusion of water vapor at the surface of the particles and for an increase in the humidity of the gas vehicle; flue-gases, however, should be kept above the dewpoint.

Insulator breakage by hunters and mischievous children has prompted Western Union to adopt insulators of wax-bearing rubber to afford the desired non-wetting characteristics; glass insulators are also bushed with similar rubber.

Loss-cost may be three times as great if, instead of taking only the fuel cost at the power plant, there is included a pro rata share of the investment in all facilities supplying the loss; usually the components will be more nearly equal.

MANUFACTURERS and MARKETS

PROMOTIONAL VALUE of a company-owned airplane is appreciated by the Line Material Co, Milwaukee, which uses its Beechcraft Twin transport for general sales promotion, routine transportation, and special research development projects

Flying L-M Customers Inspect Products in Use

With manufacturing plants, located in eight widely scattered cities in the United States and Canada, the Line Material Co, Milwaukee, finds the answer to the question of how to "get around" quickly and conveniently in the facilities provided by a company-owned Beechcraft Twin transport.

Before the company acquired the first of the several personal planes it now owns, personnel traveling by air had to use commercial airlines and had to make their time conform to airline schedules. It is now possible, by utilizing company aircraft, to schedule flights to meet business appointments and meetings and other company transactions. In one month the Beechcraft was flown 52,100 passenger miles at an operational cost of 6c per passenger mile.

The company manufactures high intensity airport lights with controllable beams of 180,000 cp that are used widely. In addition to demonstrating the efficiency of the lights, the Beechcraft is used for research and development work and field checks on airport lighting installations. Special cameras are installed in the plane for the latter purpose, with which coordinated time-voice-sight photographs are made of aircraft approaches to lighted airfield runways, a double lens arrangement permitting simultaneous shots of the aircraft instruments.

During the recent New York sessions of the National Rural Electric Cooperative Association and American Institute of Electrical Engineers, Line Material Co Beechcraft was used to fly 85 passengers on courtesy flights over the New York area.

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Quantity Discounts New Target of FTC

Manufacturers who give a few of their biggest customers super-size discounts are having their sales executives, and their lawyers, take a good look at a recent Federal Trade Commission action.

FTC is getting ready to use for the first time its authority to fix the maximum quantity of a product upon which a seller may give his maximum quantity discount.

The rule proposed would apply now only to tires and tubes. But independent distributors and retailers are almost certain to ask for such a rule on other products and commodities if and when FTC makes its tire ruling stick.

Here's the kind of rule FTC is proposing:

It would say that a carload of 20,000 lbs is the maximum quantity of tires and tubes upon which differentials in price, because of quantity, may be granted.

Its meaning: The buyer of two or five or 50 carloads gets the same quantity discount—and no more—as the buyer of a single carload.

This is the first time FTC has used this authority, even though the agency has had it ever since the Robinson-Patman Act was passed in 1936. The announcement of the ruling touched off immediate reactions, and tire industry executives indicated they would fight the action through the courts, if necessary.

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French Foresee Big Gains in Electrical Production

Productivity in France's heavy electrical equipment industry can be raised to a level equal to that in the United States if techniques recommended by a 16-man French mission are adopted, the mission reported before returning to France last week. The group had spent six weeks studying the industry in the United States under ECA sponsorship.

The fact that production in the industry in this country outstrips French production methods was attributed, among other things, to an ability to standardize and mass produce. Roland Koch, engineer with the mission, who submitted the findings, mentioned use of the same frame for different-hp motors as an example. Another major factor, Mr Koch said, was the superior quality of raw materials used in this country.

MANUFACTURING BRIEFS

Automatic Electric Heater Co. Pottstown, Pa., has changed its name to Sepco Corp in order to identify the company style with the trade name of its Sepco electric water heaters.

A. B. Chance Co. Centralia, Mo., has recently purchased the Bailey Electric Co, San Francisco. Among the items acquired are tee, cross, stud, and ground connectors; couplers; reducers; elbows; tubing and plug terminals; and tubing and cable bus supports.

On the twenty-fifth anniversary of its existence, Soreng Manufacturing Corp, Chicago, will have built and moved into its new and modern one-story plant in Schiller Park, a Chicago suburb. Thi-

plant has an area of about 60,000 ft. In addition to the new plant, the company has one at Fremont, Ohio.

Crosley division of Avco Manufacturing Co will make electric water heaters for the first time. The new lines will be introduced this month. Crosley also will introduce a full line of home and farm freezers and a line of refrigerators with new styling and engineering features.

To help salesmen of its member companies and their dealers step up the effectiveness of their appliance selling, the National Electrical Wholesalers Association has published an Appliance Sales Manual. In 24 profusely illustrated pages, the manual presents the subjects of outside selling, continuous sales training, demonstrating to sell, using the user, time payment selling, and opportunities in service.

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Manufacturers Make New Sales Assignments

Electrical manufacturing companies have recently made the following appointments to their sales staffs:

Standard Transformer Co. Warren, Ohio, has appointed Reitze & Co. 139 South 5th St, Louisville, Ky., as representative in the State of Kentucky.

Worthington Pump & Machinery Corp. Harrison, N. J., has appointed John P. McArthur manager, West Coast sales, with headquarters in San Francisco. His territory includes the Los Angeles, San Francisco, Seattle, and Salt Lake City district offices.

Sylvania Electric Products Inc. New York, has appointed F. H. Heintz division sales manager of the southwestern division, with offices in Kansas City, Mo. H. L. Schreiner has been made field representative in the Los Angeles division office.

Black & Decker Mfg Co. Towson 4, Md., has appointed Earl Roberts a sales engineer with the Memphis branch. David Rolston has joined the B&D organization as home-utility sales representative in the Philadelphia territory.

Landers, Frary & Clark has appointed J. J. Coughlin district manager of portable electric appliances in Connecticut, western Massachusetts, and Rhode Island. George W. Erdmann, Jr. has been named district manager for eastern Pennsylvania, New Jersey and Delaware. Carl McLaughlin, J. J. Diemente, and O. H. Hansen have been made district managers in New York City, Upper New York State, and North New Jersey, respectively.

Kwikon Co. Chicago, manufacturers of conduit fittings, has appointed the Curtis Sales Co, 4019 Prospect Ave, Cleveland 3, Ohio, its representative in northern Ohio and northern West Virginia.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Indiana—Southeastern Indiana Rural Electrification Membership Corp., Osgood, 99 mi. rural distr. line and sys. imprvs., Ripley Co. **$455,000.**

Iowa—Cherokee County Rural Electric Co-operative, Cherokee, 16 mi. rural distr. lines and sys. imprvs., Cherokee Co., **$100,000.** Brown Eng. Co., K P Bldg., Des Moines, consult. engr.

Kansas—Norton-Decatur Co-operative Electric Co., Norton, rural distr. lines in Decatur, Graham, Norton, Phillips, Rooks and Sheridan Counties. **$950,000.** Raymond H. Reed & Co., Columbus, Neb., consult. engrs.

Minnesota—Stearns Co-operative Electric Assn., Melrose, 343 mi. rural distr. lines, sys. imprvs., Stearns Co. **$820,000.** Engineering Service, Inc., 528 Syndicate Bldg., Minneapolis, consult. engr.

New Mexico—Central Valley Electric Co-operative, Inc., Artesia, 253 mi. rural distr. lines and sys. imprvs. Eddy Co. **$865,000.**

North Dakota—Slope Electric Co-operative, New England, 563 mi. rural distr. lines, Adams, Bowman, Hettinger and Slope Counties. $600,000. Ulteig Eng. Corp., 1114½ Front St., Fargo, engrs.

Oregon—Columbia Power Co-operative Assoc., Long Creek, 582 mi. rural distr. lines, 125 mi. 66 kv rural distr. lines and sys. imprvs., Wheeling Co. **$2,230,000.**

Pa., Polk—General State Auth., 18 and Herr Sts., Harrisburg, reconstruct entire electrical sys. at Polk State School, **$505,-630.** Harry B. Joyce, 616 Commerce Bldg., Erie, consult. engr. A. F. Jones, c/o owner, ch. engr.

Pa., Warren—General State Auth., 18 and Herr Sts., Harrisburg, converting electrical sys. from direct current to alternating current at Warren State Hospital, **$100,000.** Harry B. Joyce, 616 Commerce Bldg., Erie, consult. engr. A. F. Jones, c/o owner, ch. engr.

Tennessee—Lincoln County Electric Membership Corp., Fayetteville, 70 mi. rural distr. lines and sys. imprvs., Lincoln Co. **$160,000.**

Texas—Southwest Texas Electric Co-operative, Inc., Eldorado, 50 mi. rural distr. lines and sys. imprvs., Schleicher Co. **$150,000**

Texas—Mid-South Electric Co-operative Assoc., Navasota, 93 mi. rural distr. lines and sys. imprvs., Grimes Co. **$210,000.**

Virginia—Old Dominion Power Co-operative, Chase City, 34,500 kw. steam generating plant on James River, near Scottsville; 888 mi. rural distr. lines, substations and other generating facilities, Charlotte Co. **$14,320,000.**

Wyoming—Niobrara Electric Assoc., Inc., Lusk, 504 mi. rural distr. lines, more house facilities and sys. imprvs., Niobrara Co. **$730,000.** Flora Eng. Co., 1717 E. Colfax St., Denver, Colo., consult. engr.

Low Bidders & Contracts Awarded

Fla., Tallahassee—City, furnishing circuit breakers and control equip. for new power plant substations to Westinghouse Electric & Mfg. Co., Union Bank Bldg., Pittsburgh, Pa., **$161,933**; transformers for substation for municipal power plant, to General Electric Co., Red Rock Bldg., Atlanta, Ga., **$187,810.** Awarded 9/27.

Illinois—Southeastern Illinois Electric Co-operative, A. F. Lentz, mgr., Harrisburg, labor, 28.5 mi. 69 KV rural distr. lines, Proj. Illinois 37 H, Saline, to Continental Co., 54 Waverly Pl., Dayton, 9, O., **$83,880.** Bids 9/23, awarded 9/29. Rural Line Engineers, 440 S. Brentwood Blvd., Clayton, St. Louis, Zone 5, Mo., engrs.

Kansas—Pioneer Co-operative Assn., Inc., W. C. Rhodes, mgr., Ulysses, Sept. 27, 272.06 mi. rural distr. lines, Grant, Kearney, Haskell, Gray, Morton and Stearns Co., from A. F. Reis, 702-4 National Bank of Topeka Bldg., Topeka, **$262,853.** Est. $300,000.

Minn., Elbow Lake—Village, A. W. Roettiger, clk., Village Hall, municipal diesel electric plant, **$275,000.** General Eng. Corp., 2950 Chicago Ave., Minneapolis, engrs.

Miss., Yazoo City—Yazoo Co., electric substation for Miss. Chemical Corp., from Westinghouse Electric Co., Jackson, **$119,-500.**

Missouri—Ozark Border Electric Co-operative, P. G. Wings, pres., Poplar Bluff, 285 mi. rural distr. lines, Butler, Dunklin, New Madrid, Ripley and Stoddard Counties, to Whailes Constr. Co., Jackson, Tenn., **$376,267.** Awarded 9/29/49.

N. Y., Schenectady—U. S. Atomic Energy Comm., c/o eneral Electric Co., River Rd., administration and security bldg., fire station, equip. maintenance shop, carpenter and machine shop, warehouse, completing access road, clearing, rough grading, drainage, site roads and pavement, steam and electrical distr. sys., sewage collection, sewage disposal and water distr. sys., water tank at West Milton, Inv. AE 50-SCH-1 to Thompson Constr. Co., 11 N. Pearl St., Albany, **$560,-311.** Bids 9/20.

North Dakota—McKenzie Electric Co-operative, Watford City, Sept. 23, 332.1 mi. distr. lines, 12.5 mi. transmision lines and 10.5 mi. underbuilt lines, McKenzie Co. from Line Builders, Inc., Billings, Mont., **$389,709.**

O., Hamilton—City, Contr. 18, municipal electric plant, underground and overhead transmission and control circuits, to Collier Constr. Co., Film Exchange Bldg., Cleveland, **$240,719.** Bids 5/13.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Idaho, Coeur d'Alene—Idaho-Montana Pulp & Paper Co., Missoula, Mont., pulp mill, **$5,000,000.**

N. Y., New York—Lever Bros. Co., 50 Memorial Dr., Cambridge, Mass., plans by Skidmore, Owings & Merrill, 5 E. 57 St., Zone 22, 26 story office, Park Ave. between 53 and 54 Sts. **$6,000,000.**

Pa., Phila.—City, Bureau of Aeronautics, City Hall, plans by Carroll, Grisdale & Van Alen, 1616 Walnut St., Zone 3, 3 story, rein.-con., brick aluminum, fingertip type airport terminal, Essington Ave., International Airport, **$5,000,000.** Airways Engineering Consultants, Inc., 1212 18 St. N. W., Wash. 25, D. C., consult. engrs.

Tex., Galveston—Galveston Housing Auth., City Hall, plans by R. R. Rapp, F. Stafford & T. M. Price, Guaranty Bldg., and D. Barthelme, 11 Wynden Dr., 600 low rental housing units. **$4,200,000.**

Wash., Yakima—Yakima Housing Auth., Yakima, housing, **$1,500,000.**

Low Bidders & Contracts Awarded

Ind., West Lafayette—Purdue University, West Lafayette, Sept. 27, 3 and 4 story, steel, concrete dormitory, chemistry and agriculture bldgs., to George A. Fuller Co., 111 W. Washington St., Chicago, 2, Ill., **$2,607,000.** Bids 9/27, awarded 9/30.

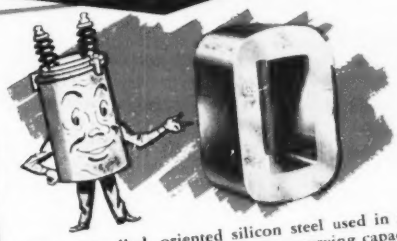
Md., Baltimore—U. S. Eng., P. O. Box 1715 24 St. and Maryland Ave., Zone 3, general contract veterans administration hospital, quarters, service bldgs., utilities, to Consolidated Eng. Co., Inc., 20 E. Franklin St., **$4,853,000.** Bids 9/20, awarded 9/28.

I'm built to take it ...and DELIVER!

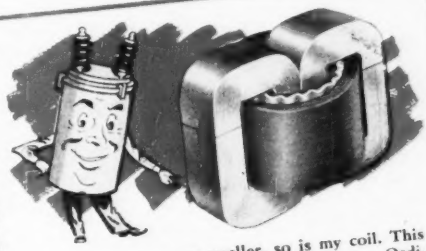
RAIN OR SHINE... it makes no difference! Load me or *overload* me, I'm built to take it... from the top of my bushings right down to the bottom of my cold-rolled, oriented silicon steel core. Moloney engineers considered everything that could possibly happen to a line transformer and went to work to design a transformer to do the job better. I'm the answer... literally a test-tube baby... *lighter, smaller, better*... with a "Surge-Tested" Design pedigree!

ME49-19

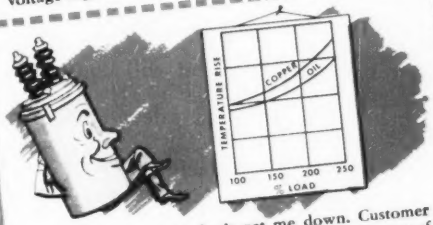
Here's WHY



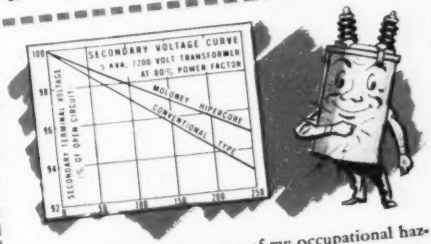
The cold-rolled, oriented silicon steel used in my core has 30% to 35% greater flux carrying capacity than non-oriented steel. In 3 Kva size I weigh but 125 lbs. including oil, and with CSP attachments only 140 lbs. Yet with less weight I have greater short-time overload capacity and provide better voltage regulation.



Because my cores are smaller, so is my coil. This reflects not only in my weight, but in my size. Ordinary transformers of the same Kva up to 30% larger find difficulty in performing tasks I consider routine. Besides, I don't need nearly as much space in the storeroom, on the line truck, or on the pole.



Short-time *overloads* don't get me down. Customer loads, being what they are, anyone with an ounce of temperature gradient knows that heavy peak overloads are inevitable. So I just keep calm and am thankful for my generously proportioned cooling ducts and maintain a lower hottest-spot-over-oil temperature.



My engineers say that some of my occupational hazards send many young transformers to an early grave. They tell me not to worry though, because my rugged constitution can take these hazards in stride and that I will live a lot longer on the job than many of my contemporaries... and perform better!

Illustrated: 5 Kva. 7200 to 120/240 volts Conventional Type HiperCore Transformer.

Send for Bulletin H-303 for complete details of HiperCore Transformers.

MOLONEY ELECTRIC COMPANY

Sales offices in all principal cities

FACTORIES AT ST. LOUIS, MO. AND TORONTO, ONTARIO, CANADA

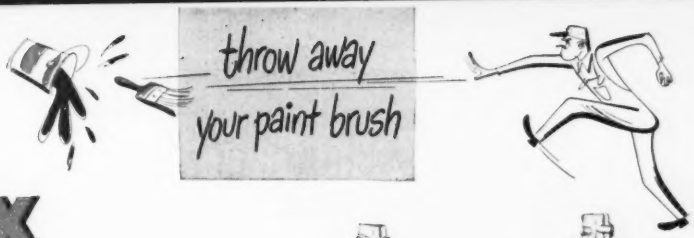
"Better Business goes hand in hand with Better Street Lighting..."

Says **M. W. Arthur,** ***Vice President***
Consumers Power Company
Jackson, Michigan

"IF local merchants are to enjoy their logical share of local patronage in the communities which *you* serve, mark the path to their doors with Modern Street Lighting." Mr. M. W. Arthur, Vice President, Consumers Power Company, Jackson, Michigan, continues, "Centralized purchasing power must be maintained in the interest of community welfare and prosperity. And no other single civic improvement will contribute so much to the personal safety and financial security of the townspeople—with subsequent increased loadings and resultant revenue to *you* —than that of a modern street lighting installation."

FOR MORE FACTS... *To "shed more light" on methods employed by a utility to stimulate interest in modern street lighting, write for your free copy of "A Planned Program for Better Street Lighting."*

The Street and Traffic Safety Lighting Bureau, 155 East 44th St., New York 17, N. Y.



ELEMEX
Capacitors

in stainless steel tanks...

do a good job...good enough to do it!

ELEMEX capacitors produce more pay load on a distribution system by supplying kilovars economically at or near the load. They cut copper losses, raise voltage, and increase carrying capacity of feeders and other equipment.

ELEMEX capacitors do this job well . . . they are good enough to do it for a long time. Highest quality, low-density paper used in each pack . . . humidity-controlled rooms . . . individual control of evacuation and capillary impregnation with ELEMEX liquid . . . step-by-step testing of each individual unit throughout production. Those are some reasons for their outstanding 5-year service record.

Many Desirable Features

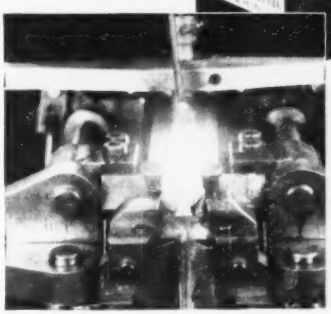
Stainless steel tanks . . . uniform terminal elevation above hangers for both 15 and 25 kvar sizes in each voltage class . . . L-M "Paragroove" connectors . . . L-M "Lifetime" solder-sealed bushings . . . sturdy, wood-reinforced shipping cartons.

Ask the L-M Field Engineer for the whole story; or write Capacitor Division, Line Material Company, Milwaukee 1, Wisconsin.

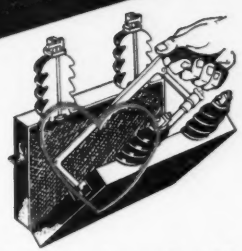
Corrosion-free Welding of Stainless Steel Tanks

ELEMEX capacitors come to you in stainless steel tanks, which never need painting. They save installation time because the lineman doesn't have to repair scratches or gouges caused by handling . . . doesn't have to scrape paint to get a good ground. And they *do* cut maintenance costs!

Tanks and covers are fabricated by the well-known Heliarc welding process. This method applied to stainless steel of very low carbon content assures a finished tank that is free of corrosion—*even at the welds.*



"Heliarc" welding of stainless steel tanks. Arc travels up one side, across, and down the other, butt-welding the seam visible in the slot in the jig.



Low Unit Stress Assures Long Life

Conservative design, with lowest stress on packs and insulation. Heavy laminated major insulation, folded at the corners without slitting, assures uniformly high impulse strength.

7130

LINE MATERIAL . . . Capacitors

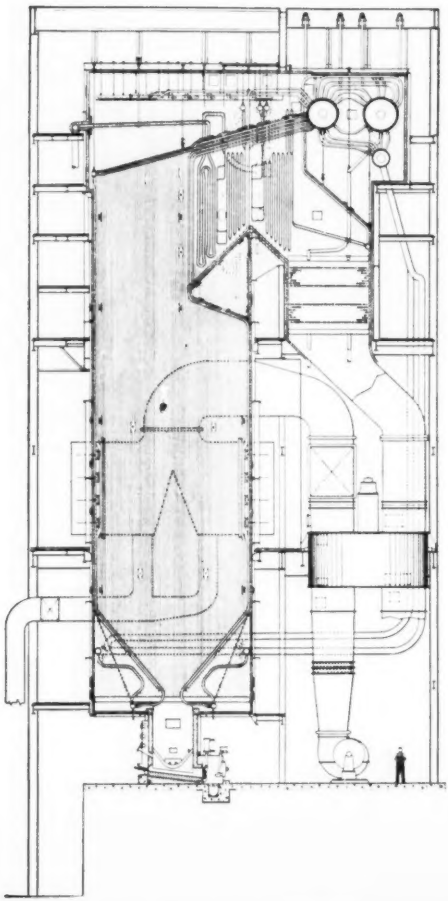
LM

Complete Coordinated Equipment for All Distribution Requirements

Recent C-E Steam Generating Units for Utilities

HAWTHORN STEAM ELECTRIC STATION

KANSAS CITY POWER & LIGHT COMPANY



THE C-E Unit illustrated here is one of two duplicate units now in process of fabrication for the new Hawthorn Steam Electric Station of the Kansas City Power & Light Company.

Each unit is designed to produce, at maximum continuous rating, 625,000 lb of steam per hr at 1335 psi and 955 F.

These units are of the radiant type with 3-stage superheaters followed by finned tube economizer surface and regenerative type air heaters.

The furnaces are completely water cooled using part plain tube and part finned tube surface. They are of the basket-bottom type discharging to sluicing hoppers.

Pulverized coal firing is employed using bowl mills and vertically-adjustable, tangential burners. Provision is also made for the use of natural gas as an alternate fuel.

B-354

C-E

Combustion Engineering–Superheater, Inc.

A Merger of COMBUSTION ENGINEERING COMPANY, INC. and THE SUPERHEATER COMPANY

200 MADISON AVENUE, NEW YORK 16, N. Y.

NEWS ABOUT PEOPLE

Gesell Directs Operations for Oklahoma City Utility

Walter B. Gesell, who has been a vice-president of the Oklahoma Gas & Electric Co since 1947, assumed the

WALTER B. GESELL

top position in the operations department when he was recently named vice-president in charge of operations, succeeding Frank J. Meyer, retired.

Mr Gesell's first association with Oklahoma Gas & Electric was in 1923, when, as a member of the rate department of the Byllesby Engineering & Management Corp, he had supervision over OG&E rate procedure. In 1939 he moved to Oklahoma City in the capacity of executive assistant, still confining his activities to rate studies and to the structure of power contracts with larger customers and with government agencies. In 1947 he was named a vice-president. He entered the utility industry as power plant engineer of Milwaukee Electric Railway & Light Co.

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William J. Sparling has been elected vice-president and manager, chain and transmission division, of the Chain Belt Co, Milwaukee. Mr Sparling joined Chain Belt in 1928 as a student engineer.

Karl B. Crawford, electrical engineer specializing in management work with the Rural Electrification Administration since 1942, has been named head of the REA's power management section of the power division. He succeeds **Franklin P. Wood,** retired. Mr Crawford joined the REA staff as an electrical engineer, and from 1942 until 1946 he served at various times as management head for Regions I, III, and X. Before his present appointment, he was equipment specialist on the staff of the chief of the management division.

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Anderson Elected Head, Indiana Electric Group

(See Front Cover)

Edward D. Anderson, vice-president and director of the Northern Indiana Public Service Co at Hammond, Ind., has been elected to the presidency of the Indiana Electric Association.

Mr Anderson began his utility career with Northern Indiana Public Service Co in 1924 as a cadet engineer and has served successfully as mechanical engineering assistant, gas engineer, district manager, division manager, general service manager, and since 1938 vice-president.

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Harold Wilcoxin, assistant superintendent of the Lakeside station of the Springfield, Ill., water, light and power department, has been appointed superintendent to succeed **Marshall Long,** resigned. Mr Wilcoxin has been with the department for 14 years. Mr Long, who has been with the city water, light and power department for 15 years, has become identified with Burns & McDonnell, Kansas City.

Henry H. Hubbard has been appointed vice-president and general manager of the Electromaster electric range division of Philco at Mt. Clemens, Mich. Mr Hubbard has been connected with Electromaster since it was organized in 1929 and has had wide experience in the electric range business during its period of rapid growth and development. He joined Electromaster as purchasing agent and after serving in this capacity for several years was elected vice-president in charge of plant and manufacturing in 1935. He has continued to head this phase of operations since Philco acquired the assets of Electromaster in 1949.

G. W. Knourek Elected V-P of Pioneer Service Co

George W. Knourek, formerly vice-president and treasurer of Standard Gas & Electric Co, has joined the staff

GEORGE W. KNOUREK

of Pioneer Service & Engineering Co, Chicago, in the capacity of vice-president and director.

Mr Knourek has devoted more than 25 years to the accounting and financial phases of the public utility business and will be in charge of the department of finance and accounts in his new connection.

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Frederic J. Porter, Jr, of the Consolidated Edison Co of New York, Inc, has been appointed commercial manager in charge of customer relations and staff operations of the commercial relations department. This promotion was part of a general reorganization of the department recently announced by R. B. Grove, vice-president. **John J. McNamara** has been made assistant general commercial manager. For several years, Mr McNamara has directed specific portions of the commercial relations department's activities as system commercial manager.

Frank E. Sanford has joined the staff of Commonwealth Services, Inc, formerly Commonwealth & Southern Corp of New York, in Jackson, Mich., in the capacity of assistant chief electrical engineer. Previously Mr Sanford had been engaged as a consultant by the Line

Material Co, Milwaukee. He spent 20 years, from 1926 to 1946, with the Cincinnati Gas & Electric Co and was holding the position of superintendent of distribution engineering when he resigned in 1946 to join the staff of ELECTRICAL WORLD. Subsequently Mr Sanford became director of research and development for the Copper Wire Engineering Association, and his association with Line Material followed.

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New Assignments

William H. Corwin has been appointed public relations director of Taylor Instrument Companies, Rochester, N. Y. Mr Corwin joined the organization in 1942 as a member of the advertising department.

Charles F. Kottcamp has been appointed chief fuels and lubricants engineer, turbine and steam power section, Gulf Oil Corp, Pittsburgh.

S. L. Manning has been appointed assistant product manager for the wire, rod, bar, structurals, and cable division of the Reynolds Metals Co, Louisville, Ky. Mr Manning joined the Reynolds organization in 1940.

E. A. Rodrigue, formerly residential and rural sales manager of the Louisiana Power & Light Co, New Orleans, has been appointed assistant division manager, southeastern division, and **A. B. Paterson, Jr.** formerly northern division sales manager, has been appointed to succeed Mr Rodrigue in the general offices.

F. S. Cornell has been named manager of the water heater division of the A. O. Smith Corp, Milwaukee. Mr Cornell had been assistant manager of the division, which operates the Kankakee (Ill.) Works of the company.

James Riddel, who has engaged for 11 years in steel mill machinery manufacture and operation at Aetna Standard Engineering Co, Youngstown, O., has joined the Clark Controller Co, Cleveland, as electrical engineer. Earlier associations included the Great Lakes Steel Corp and Republic Steel Corp.

George F. Weisenbach has been appointed general sales manager of the Deepfreeze Division, Motor Products Corp, North Chicago, Ill. Mr Weisenbach goes to Deepfreeze with a broad background as an executive in sales, merchandising, and advertising from the rubber industry.

F. A. Leach Joins Staff of Reliable Electric Co

F. A. Leach has been appointed by the Reliable Electric Co, Chicago, to handle the promotion of various new

F. A. LEACH

products. Mr Leach was formerly with the Graybar Electric Co and for the past 12 years was in charge of industrial and public utility sales for the Thomas & Betts Co, Elizabeth, N. J.

Associated with the electrical industry during the greater part of his business career, Mr Leach has specialized in sales and advertising.

OBITUARY

Frank R. Bacon

Frank R. Bacon, a pioneer in the electrical industry and one of the organizers of Cutler-Hammer, Inc., died on Oct 6 as the result of a heart attack. He was 77 years old. Mr Bacon was a native of Milwaukee and one of its leading industrialists.

On leaving college, Mr Bacon entered his father's grain business, but soon became interested in the then fledgling electrical industry, which at that time promised great future development.

In 1896 he formed the American Rheostat Co, a Wisconsin corporation, becoming its president. Then, in 1899, he organized the Cutler-Hammer company as a Wisconsin corporation, merging the American Rheostat Co and the Cutler-Hammer Manufacturing Co of Illinois. Mr Bacon was president of the consolidated company until 1921, board chairman from 1924 to 1931, and both president and board chairman from 1931 to 1945.

During his life, Mr Bacon had numerous other business connections. He

FRANK R. BACON

assisted in organizing the Lackawanna Bridge Co, Buffalo, N. Y., in 1909 and was vice-president until his resignation in 1922. He was vice-president of the Niagara Smelting Corp and president of Schweitzer-Conrad, Inc., Chicago.

His professional affiliations included membership in the American Institute of Electrical Engineers, Engineering Society of Milwaukee, New York Engineers Club, and the Electrical Manufacturers Club.

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John Murphy, well known Canadian electrical engineer and former member of the Board of Railway Commissioners, Ottawa, Canada, died on Sept 23 at the age of 81. Mr Murphy was a native of Ottawa. He retired from the position of senior electrical engineer with the Department of Railways and Canals (now the Transport Department) in 1938 after 20 years' service. His career is linked with the early development of the hydroelectric power industry in Canada. Mr Murphy was past-chairman of the Ottawa branch of the Engineering Institute of Canada, served as president of the Canadian National Committee, International Electrotechnical Commission from 1927 to 1937 and as official delegate to the World Power Conference in 1924 and 1930. He was a fellow of the American Institute of Electrical Engineers and had been active in the Canadian Engineering Standards Association and held membership in the Canadian Electrical Association.

Smither Merrill, appliance sales manager of the Toledo Edison Co until illness compelled him to resign in 1941, died on Sept 26. He was 53 years old. Mr Merrill entered the utility industry in 1916 and held assignments in Danbury, Conn.; Bartlesville, Okla.; and Hutchinson, Kan., before joining Toledo Edison in 1927.

NEW EQUIPMENT

Chain Saw

An 11-lb chain saw has been developed to cut branches up to 12 in. diam, 15 ft above the ground. When detached from pole and used as a hand power saw, it will cut timber up to 24 in. diam. Other applications—cutting propping timber, cutting poles, notching, felling trees, and cutting out tree roots.

Saw can be operated from a 110-v d-c or a-c outlet, or from a 750-w portable gasoline engine generator. Other models are equipped with 220-v, 3-phase motors for 180 or 360 cycles.

Mall Tool Co. 7725 S. Chicago Ave, Chicago 19, Ill.

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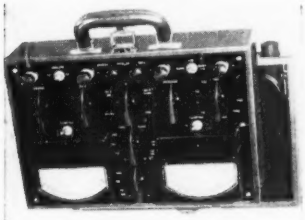

Cathodic Testing Meter

A small model of the multi-combination meter has been designed for electrolysis and corrosion investigations, and cathodic protection testing.

Arrangements are provided for measuring resistance of shunts, test leads, and resistors over a wide range; also for measuring resistivity of soil or liquid in a "soil box".

Either of two sets of instruments are available. Low and high resistance voltmeters of Model B-1 are respectively 1,000 and 20,000 ohms per v; values for Model B-2 are 3,000 and 62,500 ohms per v. Nine ranges from 10 mv to 100 v are provided on the low-resistance voltmeter; six ranges from 0.1 to 20 v on the high-resistance voltmeter. A milliammeter/ammeter is provided with nine ranges from 2 ma to 20 amp.

Meter is designed to operate on standard flashlight dry cells, mounts in 9x12x6 in. case and weighs 13 lb.

M. C. Miller, 1142 Emerson Ave, West Englewood, N. J.

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Frequency Standards

Two new secondary frequency standards are available, one offering rectangular wave output, the other sine wave output. Both instruments provide 5 v output at all frequencies, and operate from a self-contained 115-v regulated a-c power supply.

Model 100D provides sine waves at five frequencies and rectangular waves at four frequencies with accuracy on the order of 2 parts in 1 million. An internal oscilloscope permits frequency comparison with a minimum of external equipment. The Model 100 C offers sine waves only, at four frequencies with 0.001% accuracy.

Hewlett-Packard Co, 395 Page Mill Rd, Palo Alto, Calif.

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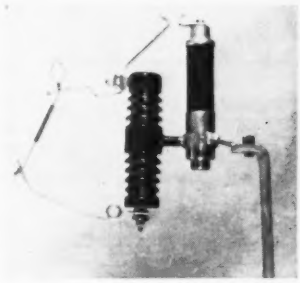
Arrester and Cutout

A new unit-combination arrester and cutout combines the design features of the 9 kv hi-stroke arrester and the 7.8 kv, 50-amp flip-open cutout to provide protection for distribution transformers on rural lines rated 7,200/12,470 and 7,620/13,200 v, grounded Y.



Arrester has a built-in reserve of gas-evolving material to compensate for erosion. Available are either EEI-NEMA standard mounting bracket for crossarm or direct-to-pole mounting, or an optional bracket, as illustrated, for mounting to distribution transformers.

General Electric Co, Apparatus Dept, Schenectady 5, N. Y.

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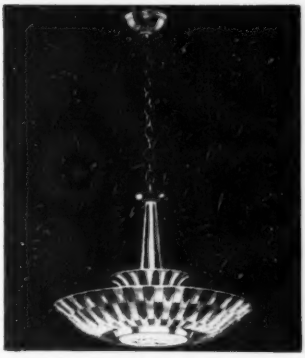


Lighting Fixtures

A new line of fixtures features a spotlight and three types of illumination. Fixture pictured has "colouvred" lens on bottom of fixture which sends a glareless spotlight downward.

By means of a three-way switch, three lighting effects are available: glareless pin-point beam, diffused light downward and upward, and a combination of both.

Lightolier Inc, 346 Claremont Ave, Jersey City 5, N. J.

ELECTRICAL BUSINESS OUTLOOK

The outlook for residential sales is strong, not only for 1950 but for several years ahead. That's the meaning of current trends in construction of homes and sales of electric appliances. In the past, about 20% of the growth in residential sales has come from adding new customers and about 80% from installation of new appliances. This outlook deals with prospects for new customers. Next one will analyze the appliance market.

Growth in new customers depends basically on the increase in number of families. Our population has shot up remarkably in the last few years, but more children or more old people in each family don't make new customers. It's the increased number geting married and starting new households that counts.

New families become new customers when they either get a new house (or apartment) or move into an old one. Before the war (chart) the total number of residential customers increased at roughly the same rate as the total number of dwelling units. The number of customers increased somewhat faster because some of the houses and apartments left vacant in the depression years were being filled up and farms were being electrified.

During the war, the number of customers levelled off as families doubled up or moved into military quarters. But since the war, these families have been moving into homes of their own. And the rate of family formation has stayed high. Result: The number of residential customers has zoomed much faster than the number of homes.

For the next few years, the volume of new homebuilding will be a good indicator of the number of new residential customers. There's no longer room for many new families to move into old houses. So residential customers should again pick up at about the rate new homes are built. As the supply of housing increases, some homes and apartments will stay vacant. But most new dwelling units will have occupants and electric appliances.

Present indications are that from 500,000 to 600,000 new non-farm families will be formed each year from 1949 through 1953. During this period, new homes may be built for over a million families still living doubled up. That adds up to 700,000 to 800,000 new homes each year for the next five years, in addition to those needed for replacement of temporary or substandard dwellings.

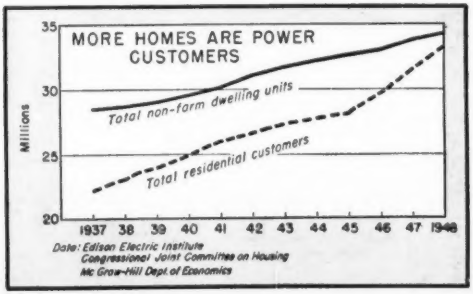
This year homebuilding is setting a new record. The total number of housing starts may hit 950,000. Completions late this year and early next year will add to the residential load. The potential need for housing is still big enough to support this volume for several years. Big question is how many families will have the money for new houses and be willing to spend it.

A survey by the Federal Reserve Board shows that people do plan to buy a large number of homes in the next five years. The Board found that about 7 million families will buy houses in the five years beginning with 1949. There's no telling how many of these will be *new* houses, but the figure could easily run to 2.5 million, or 500,000 yearly. Moreover, the Board only surveyed existing families. New family purchases could increase the number of new homes required to a million per year.

The Federal Reserve Board came up with its estimate of 7 million by adding the number of people who said they would buy or build a house in 1949-53 to half the number who said they probably would do so. A more optimistic estimate can be made by adding all those who said they would or probably would buy to one half those who said they might. That would give 12 million. But this last figure surely includes a lot of replacement of old homes and doesn't indicate potential utility customers.

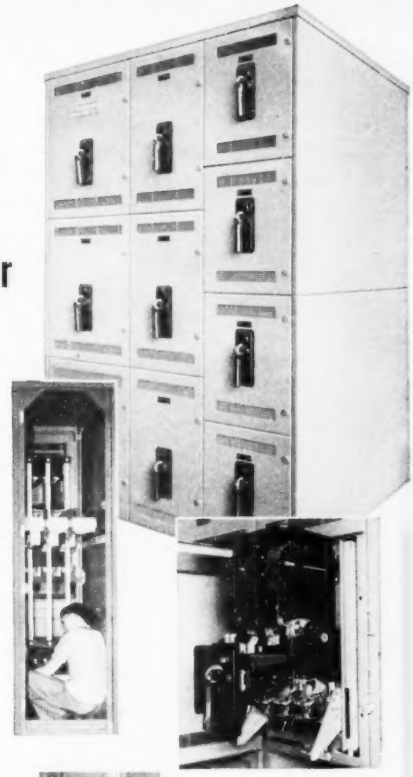
Whether or not people carry out these plans to buy homes depends on (1) continuation of high personal incomes (2) availability of suitable houses at low enough prices and (3) favorable financing terms. Right now condition number one looks good.

It all adds up to continued growth in the number of residential customers. If incomes stay high, our population is going to spread out into more dwelling units. That will mean some shifts in customer location and a substantial net increase in customers.



Introducing
MULTUMITE "600"

I-T-E's Improved Low Voltage Switchgear with metal-panel circuit breakers



New Construction Emphasizes . . .

Accessibility

Breakers: The I-T-E breakers are completly accessible from all sides. When racked out to the fully disconnected position, all components are in position for inspection and maintenance, even without removing the breaker from the switchboard.

Cable connections: Full height, hinged rear doors give easy access to the bus compartment which is so arranged as to provide more space for cable and conduit entry and for making cable connections.

Safety

The metal panel of I-T-E circuit breakers forms an effective barrier between the bus and breaker compartments and seals off ionized gases.

Control wiring in the bus compartment is now encased in metal wiring troughs . . . an added degree of protection in low voltage switchgear.

Compactness

Multumite "600" requires less space. 15,000 amp. IC breakers (KA) can be stacked four-high. Both 15,000 and 25,000 (KB) amp. ratings are in compartments only 18" wide. 50,000 (KC) amp. ratings with or without electrical operation are mounted three-high in frames only 24" wide.

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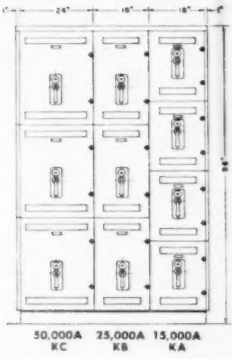
Multumite "600" is improved, and yet retains all the extra features that have long been a part of I-T-E quality switchgear. You'll still find the proved pantagraph drawout mechanism, formed doors, end panels and trim: grilled louvers and the famous I-T-E baked enamel finish.



See your local I-T-E Representative for full information

Application: 250 V d-c, 600 V a-c. 15-6,000 amps. continuous ratings. 1 to 4 poles. 15,000, 25,000, 50,000, 75,000 and 100,000 RMS amp. interrupting ratings.

SPECIFY I-T-E FOR DEPENDABLE SWITCHGEAR

I-T-E Circuit Breaker Co., 19th & Hamilton Streets, Philadelphia 30, Pa.

Power Switching Equipment Division: Railway & Industrial Engineering Co., Greensburg, Pa.

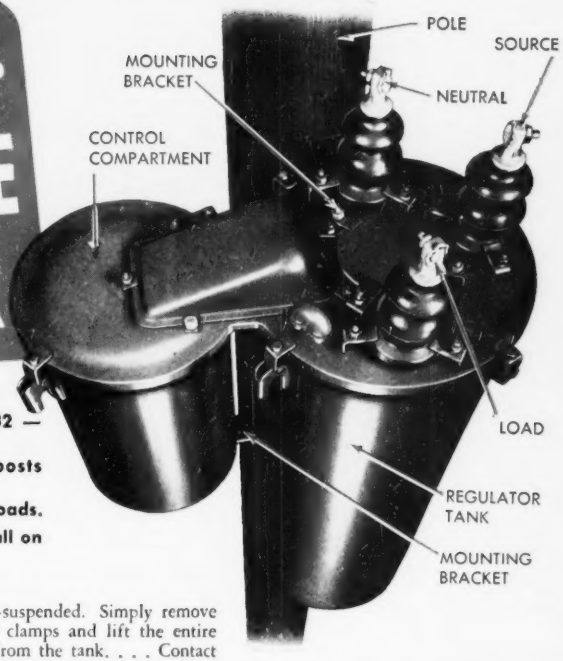
Canadian Mfg. & Sales: Eastern Power Devices, Ltd., Toronto • Export Sales: Philips Export Corp., New York

SWITCHGEAR • UNIT SUBSTATIONS • ISOLATED PHASE BUS STRUCTURES • CIRCUIT BREAKERS

MECHANICAL RECTIFIERS • RESISTORS • SPECIAL PRODUCTS

Regulate Rural Voltage ..Don't Just Boost It!

NEW
ALLIS-CHALMERS 5/8% STEP
***Pole-Type* VOLTAGE REGULATOR**



- **Provides full 20% range of regulation in 32 — 5/8% steps (10% raise and lower)**
- **Increases line and system capacity — boosts revenue.**
- **Satisfies customers — helps build additional loads.**
- **Costs but a few dollars per customer to install on average line.**

PROPER VOLTAGE REGULATION is more than just boosting voltage. It means providing adequate voltage during peak load — adjusting for light load. It means close control — and a wide range of regulation.

Here for the first time is city type 5/8% step voltage regulation from a small, low cost, pole mounted regulator.

Allis-Chalmers new pole type voltage regulator is fully automatic . . . regulates line voltage through a range of 20% in 32 small 5/8% steps, and holds ± 1 volt band. Rating is 10.8 kva, 15 amp, 7200 v, ± 10% regulation.

Easy maintenance — easy mounting — simple control are provided. First, it is cover-suspended. Simply remove four cover clamps and lift the entire regulator from the tank. . . . Contact life is long. . . . Quick-break mechanism eliminates arcing and pitting. In addition, because of small 5/8% steps, contacts interrupt smaller kva — last longer. Unit is mounted on pole as easily as distribution transformer. . . . Control requires just two simple knob adjustments to set.

Ask an Allis-Chalmers field engineer to determine the best means of improving voltage conditions on your rural system using voltage regulators. Contact a nearby A-C Sales Office or send in the coupon.

A-2779

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"Originators of the 5/8% Step Regulator!"

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☐ Send me descriptive bulletin plus "When and Where to Apply Rural Voltage Regulators"

☐ Have engineer call.

Name.....

Title.....

Company.....

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City..... State.....